

# Los Alamos Health Care Study

Los Alamos National Laboratory

Los Alamos Medical Center

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February 2001

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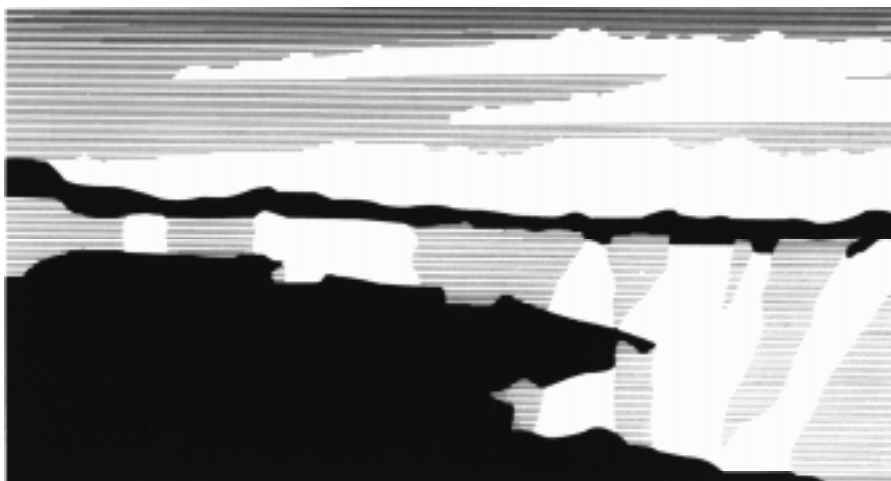
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# Executive Summary

## I. Conclusions

*The information and analysis in this report indicate that the Los Alamos National Laboratory (LANL) employee/retiree health care plans provide excellent coverage at well below average premium costs to members. LANL's health care costs have been rising at only about 60% of the rate of increase of either national insurance costs or total national health care expenditures. The University of California's (UC) stewardship of LANL's health care benefits have kept these benefits in congruence with best national employer practices while keeping cost growth below average.*

*Private health care services in Los Alamos County are found in far greater abundance and variety than is typical for towns of its size. Los Alamos has about 4 times the median number of physicians found in 18,000-person communities. This also brings about a corresponding unusually high abundance of medical specialist local availability. The local hospital, Los Alamos Medical Center (LAMC), by most measures of size performs many more services than is usual in comparable towns. The local physicians are well compensated on average, practice in a relatively low cost business environment, and LAMC enjoys very healthy financial margins that are two to three times greater than its peers' margins.*

### A. The LANL health care plans are in excellent condition.

1. UC maintains staff expertise and the national relationships required to insure almost 300,000 people. Its mission is to assure first rate health care benefits for the entire university. LANL's plans are designed and administered by UC to meet the best national practices for health care coverage provided to employees.
2. LANL's employee premium share, at 15% of insurance costs, is lower than almost all other major New Mexico employers. LANL's employee premiums are less than one half the national average employee share of about 35%.
3. LANL's gross (employer plus employee/retiree) health care costs have been rising at 3.5% per year since 1994. National average insurance costs rose at 5.8% during the same time period and total national health expenditures grew at 5.7%. LANL's employer costs have risen at only 2.2% so the common perception that they are skyrocketing is just plain wrong.
4. Availability of data on statistical utilization of services by LANL employees/retirees is sparse to nonexistent. Accordingly, detailed analyses of current utilization rates under the Blue Cross and Blue Shield of New Mexico (BCBSNM) contract and comparison of these rates with other plans and other populations could not be performed. Older data from Deloitte Touche reports and LANL budgetary sources that could be analyzed, however, revealed no more than a few percent points of abnormalities in any aggregate usage patterns. We tested a number of demographic factors and theories frequently heard about high LANL usage and believe that it is unlikely that any large and important abnormalities exist.

## Executive Summary

- B. Los Alamos County is abundantly supplied with medical services and the providers are financially well off.
1. The American Medical Association (AMA) master data file of physicians was matched with a data set containing 119 communities of population within  $\pm 1,000$  of Los Alamos County. The median number of doctors is 11 while Los Alamos has 45.
  2. Detailed analysis of specialists in the county revealed no statistically significant difference from what would be predicted based upon national ratios. The local abundance of specialists would typically be found only in a much larger community.
  3. The business practice expenses of physicians practicing in Los Alamos were found to be similar to or less than costs in other New Mexico communities. This is due to similar or lower wage rates paid to employees, lower rents, lower utilities, and equal expenses for most other items such as medical equipment, supplies, and malpractice insurance. The local physicians' practice costs were significantly less than national averages. The cost of living based upon a typical doctor's market basket (high-income people) was found to be similar to other New Mexico communities.
  4. Los Alamos's lower business practice costs, combined with locally higher reimbursement rates, and a normal high-income cost of living imply that the Los Alamos physicians are well compensated. The 1999 local survey of doctor's income and practice revenues showed no statistically significant differences from national or regional averages. The well-publicized local complaints about low doctor incomes have no basis in actual data.
  5. Local hand-wringing about high doctor turnover rates and recruitment problems have no basis in aggregate data. Turnover rates are only slightly higher than those for much larger population groups (amounting to less than one extra doctor turning over per year beyond "normal"). During the March to November 1999 time period, 11 new doctors were recruited to Los Alamos County – a number equal to the grand total found in a median community of Los Alamos size.
  6. LAMC performs many more procedures than most hospitals in comparably sized communities. It operates on a larger scale than most. (The following data is the latest available for our full data set of 119 comparably sized communities - usually about 2 years old.)
    - a. 85,000 annual outpatient visits at LAMC versus 21,000 median
    - b. 47 staffed beds at LAMC versus 37 median
    - c. 232 births at LAMC versus 152 median
    - d. 268 employees at LAMC versus 161 median
    - e. 1,539 admission at LAMC versus 1,139 median
    - f. \$6.5 million total payroll at LAMC versus \$4.1 median
    - g. \$18.5 million total expense at LAMC versus \$10.1 million median



7. Several factors provide support that LAMC is financially stable.
  - a. LAMC has a 7.7% financial margin compared to 2.9% for the median hospital in our 119 comparably sized community data set. (Nationally, large hospitals average about 4% and small hospitals about 2.5%).
  - b. LAMC performs four to five times the small-community hospital median number of outpatient procedures (LAMC has over twice those of either Taos' Holy Cross Hospital or the Española Hospital). These are generally more profitable than inpatient procedures.
  - c. 41% higher Medicare charges at LAMC than the median small-community hospital (after correcting for case mix index).

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# Health Care Plan

Most employees expect a good health care plan to be provided by their employer. It certainly is considered an important benefit to University of California/Los Alamos National Laboratory employees. Often confusion and disagreement occur about what a good health plan is and what it should be simply because terminology and historical patterns are not fully understood. Below is a brief discussion that answers the following questions concerning health care plans at UC/LANL.

1. What are the current terms and trends concerning health care delivery?
2. What kind of health care plan does UC/LANL offer?
3. What is the description and chronology of UC/LANL health care plans over the last 15 years?

Health care insurance is very different from traditional insurance. Traditional insurance typically provides protection against financial losses following relatively unlikely but damaging events. Blue Cross and Blue Shield (BCBS) developed a new form of health insurance in the 1930s that reimbursed health care costs in general instead of catastrophic health care needs. This change caused health insurance to deviate substantially from traditional insurance since health care utilization is not a rare or unlikely occurrence. On average, each person in the United States visits a physician five times a year. One of every six Americans is admitted to a hospital at least once a year. The term health care insurance is really inaccurate and is more correctly called a health care plan. A health care plan offsets many health care costs rather than offsetting only unexpected costs from catastrophic events. The experience of the many is pooled in an effort to reduce expenses to a manageable prepayment size for any one individual.

Up through the 1980s and into the 1990s insurance companies charged employers or individuals annual pre-

miums and generally paid health care providers on what is termed a fee-for-service basis. Under a fee-for-service health plan, each time a beneficiary used a covered service the insurance company paid the provider a set amount that was prescribed by the insurance plan or negotiated between the insurer and the provider. Under this system the beneficiary could obtain services from any provider he chose as long as the service was covered in the plan. Many plans had an annual deductible that had to be satisfied before reimbursement.

Rising health care costs in the 1980s and 1990s caused the emergence and growth of managed care, which included a range of new insurance approaches and relationships between insurers and providers. Health maintenance organizations (HMOs), which deliver services on a capitated basis rather than a fee-for-service basis, became common. Under a capitated plan the primary care physician receives a fixed amount of payment per patient, per year, regardless of the volume or cost of services each patient requires.

Also over the last 15 years, preferred provider organizations (PPOs) came into existence. A PPO either limits beneficiaries to a set list of physicians and providers or provides economic incentives to use physicians offering discounts to the insurer. Point-of-service (POS) plans, which require members to use providers within their networks for certain services with the option to go to non-network providers for other services at a much higher cost, also grew.

Rising costs to deliver health care resulted in substantial changes in the health care industry in the 1990s such as the growth in managed care with a decrease in fee-for-service health care plans. Another change was the growth in self-insured or self-funded health plans. Self-insurance refers to the assumption of claim risk by an employer, union, or other group. Self-funding refers to the payment of insurance claims from an established bank or trust account. A common operational mode of self-insured plans is an administrative services only (ASO) plan. Under this type of arrangement the administrator

## Health Care Plan

(often an insurance company) handles the claims and benefits paperwork for the self-insured group and insurance claims are paid from an employer bank account. Self insurance benefits the employer because they are exempt from most premium taxes and often can retain interest on reserves.

Currently the health care plan enjoyed by LANL employees is a self-insured and self-funded plan that is similar to a cooperative. Employees have pooled their purchase of health care with UC assuming a fiduciary relationship with employees. The majority of the plan is a type of “cost-sharing” where UC and UC employees jointly pay the actual cost of most of the health care consumed by employees as specified in the health care plan contract. A small portion of the plan includes a catastrophic stop-loss premium of about \$654,000 per year that covers UC for incurred individual employee costs over \$50,000 in a given year. This portion of the plan more closely resembles true insurance. Under this self-insured, self-funded plan UC outsources an ASO contract for implementation and administration to a third party, Blue Cross Blue Shield of New Mexico, which engages providers to deliver health care services to the employees.

As the third party administrator of the UC/LANL plan, BCBSNM serves as fiduciary to UC by implementing and administering the plan to carry out the wishes of UC as contractually specified. In like fashion, UC serves the employees’ collective health care interests by acting as fiduciary to employees. When properly understood, the relationship between LANL employees and BCBSNM should be positive not adversarial. UC serves the employees’ collective interests and Blue Cross serves UC’s interests.

The cost of the plan at LANL is borne primarily by UC and constitutes additional tax-free income for employees. Over the past few years there have been various federal tax reform proposals with provisions that would recognize this as income and tax it as such. Fortunately for LANL employees these tax reforms have not yet been implemented.

Risk management is important to control costs of the plan not only for UC, the major cost bearer, but also for employees collectively. BCBSNM, under the ASO contract, provides the service of risk management. Uncontrolled costs have the potential to damage UC and the Laboratory as institutions. In order to protect the collective interest of all UC/LANL employees, Blue Cross may come into conflict with individual employee interests and desires when terms of the contract are disputed.

Los Alamos National Laboratory has not been immune to the national changes in health care that have occurred in the 1990s. However, data shown later in this section indicate that UC/LANL continues to provide one of the most generous employee health care plans in the northern New Mexico region. UC has staff and professionals that are skilled in planning and negotiating a health care plan that is best suited for each UC campus depending on the providers in the area. UC has managed to keep LANL’s health care cost increases well below national trends by adjusting health care plans over the years to keep up with current and best practices in health care delivery. The chronology that follows reveals that UC/LANL health care plans have undergone changes and adjustments similar to national patterns.

**Los Alamos Health Care Plan (LAHCP): 1985 – 1994**

In 1985, the Los Alamos Health Care Plan, a fee-for-service plan, was the sole plan offered to LANL employees and was available to employees until 1994. It was administered through Prudential. Glen Slaughter and Associates continued as the third party administrator for claims processing. In 1989, LANL became self-insured and used Prudential for claims handling. For several years (1985-1989) employees paid no portion of the premium. In 1990, employees began paying a small portion of the premium.

**Lovelace HMO: 1986 – 1994**

In 1986, Health Maintenance Organization (HMO) plans were offered to employees through Lovelace and Health Dimensions. Although premiums gradually increased each year, employees paid no portion of the premium and the HMO premiums continued to be fully paid by the employer through 1994.

In 1994, the premium for the LAHCP fee-for-service plan increased dramatically. The rates for the employer portion of the premium were modified to match California rates. This caused the amount of the premium paid by employees to increase substantially (approximately 25%). Many employees transferred to the Lovelace HMO.

**Health Dimensions/Qual-Med: 1986 – 1994**

The Health Dimensions HMO was made available to employees in 1986. In August of 1987, Foundation (Qual-Med) purchased Health Dimensions. Although premiums gradually increased each year, employees paid no portion of the premium. The premiums paid by the employer for this HMO were slightly less or similar to the Lovelace HMO over the years.

**Los Alamos Total Care (LATC): 1995 – 1997**

In 1995, LANL discontinued the Lovelace and Qual-Med HMOs and the Prudential LAHCP fee-for-service plan. Los Alamos Total Care (LATC), a self-insured, point-of-service plan with claims handling through Prudential was implemented. This plan continued through 1997.

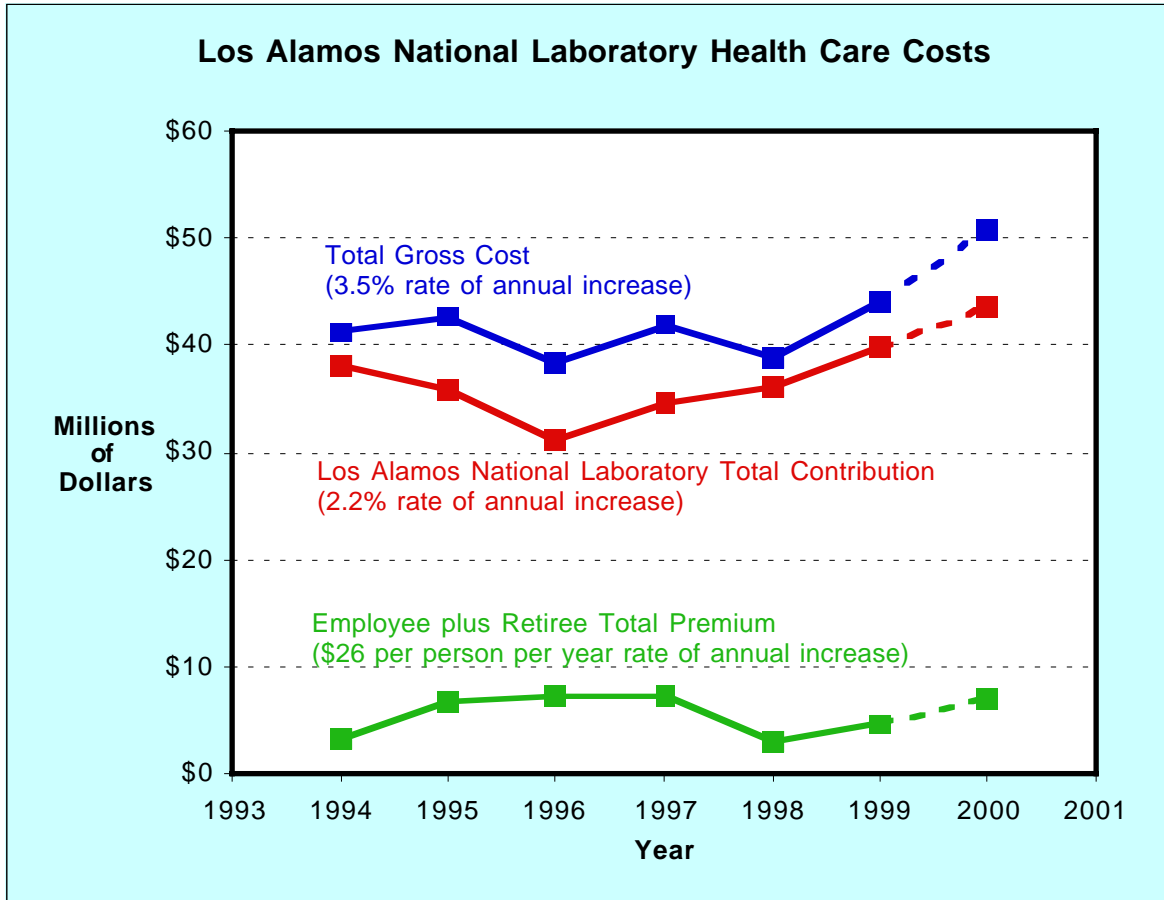
**Core: 1995 – 2000**

In 1995, LANL initiated a new, self-insured, fee-for-service plan called Core in addition to the LATC point-of-service plan. The claims handling function continued to be handled by Prudential. Employees have never paid a portion of the Core premium, but pay a high deductible. This plan is popular with Medicare eligible LANL retirees.

**Blue Cross and Blue Shield of New Mexico: 1998 – 2000**

In 1998, a three-year contract with BCBSNM was put into place for both point-of-service and HMO plans. The Core plan continues to be available with no employee premium and with claims processing through Prudential.

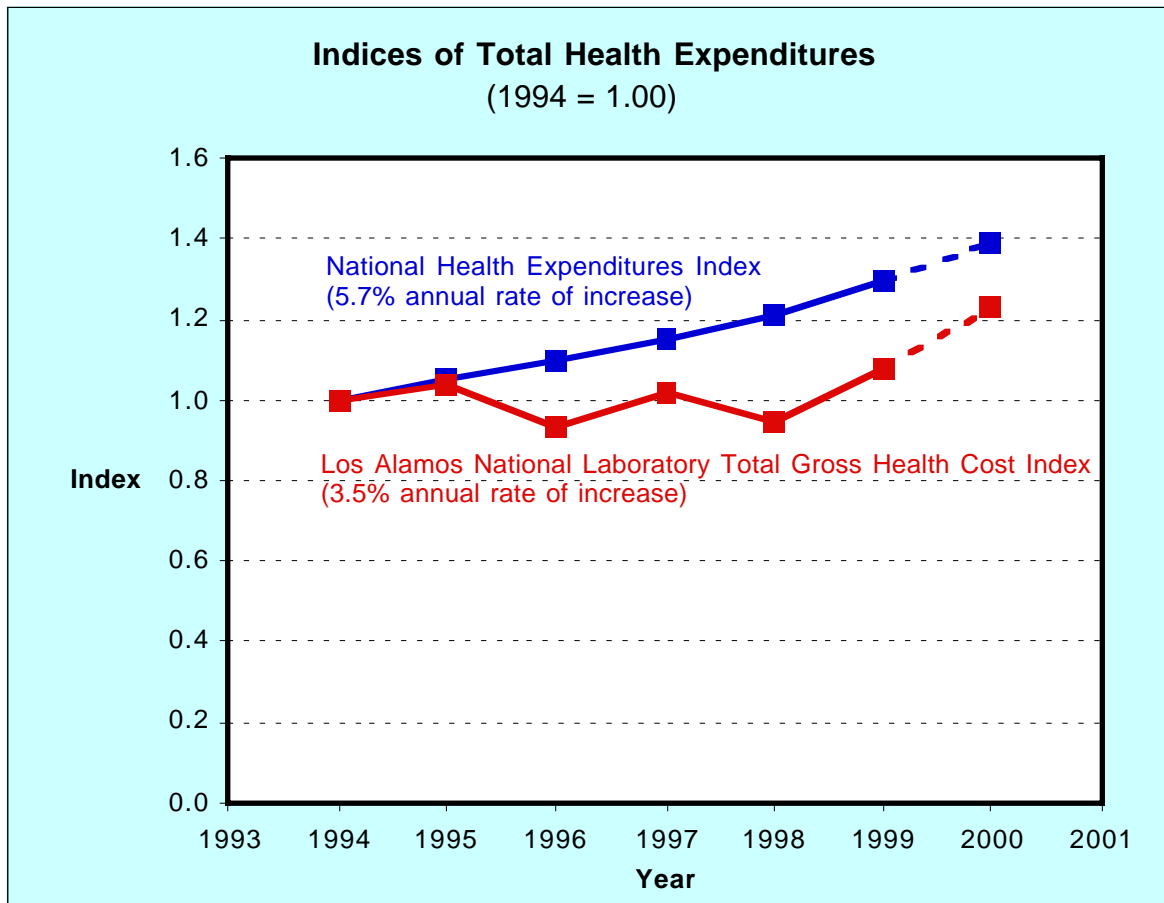
Employees paid a portion of the premium. Although the plan was insured through BCBSNM in 1998, in 1999 LANL self-insured and self-funded the plan with BCBSNM handling claims administration services only.



### Los Alamos National Laboratory Health Care Costs

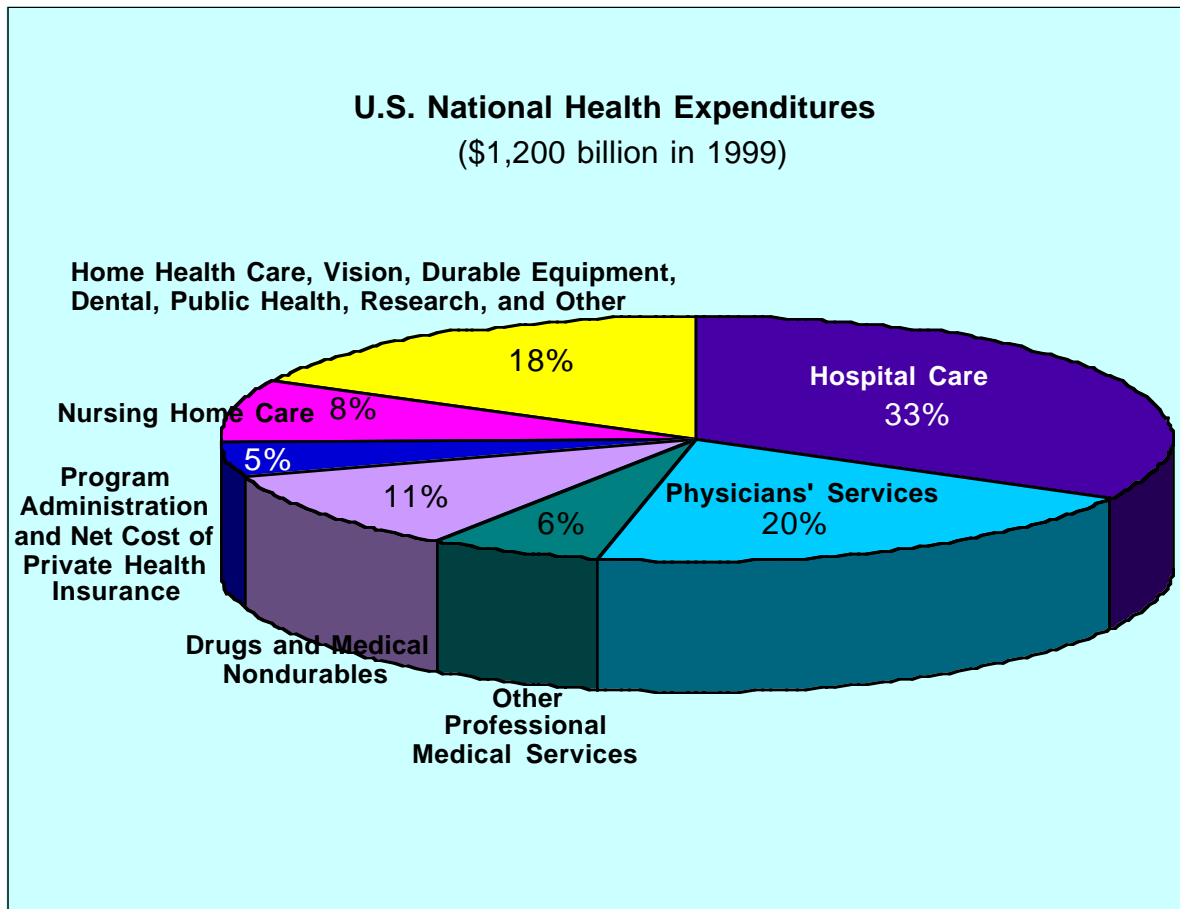
Los Alamos National Laboratory's health care costs have been rising at a rate of 3.5% per year. This is well below national averages and reflects good control of our costs since the early 1990s. The lack of actual financial information communicated to management and employees has frequently led to the misperception that our costs have been rising at an unreasonable rate. The opposite is true.





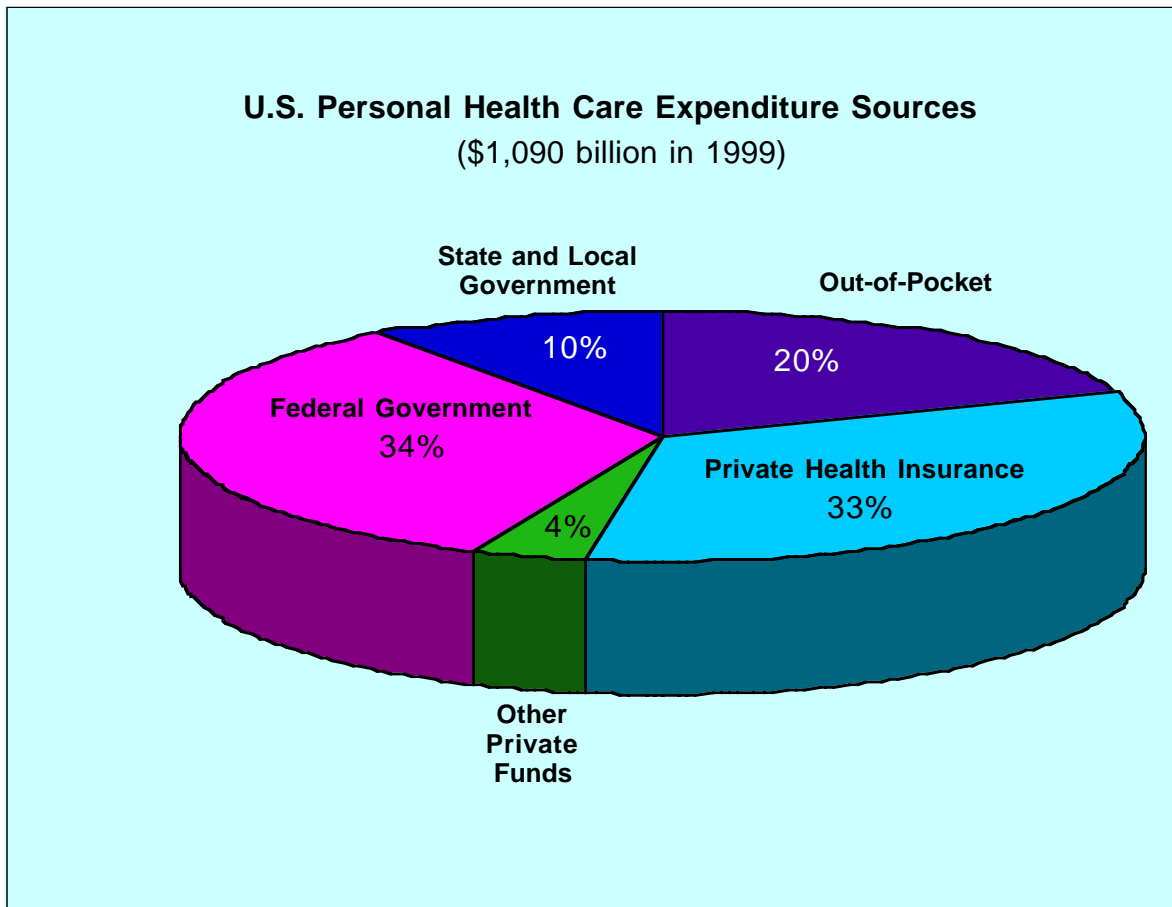
### Indices of Total Health Expenditures

Los Alamos National Laboratory's total health care costs have been rising at only 60% of the national average. The same conservative increase in costs is true of our insurance costs compared to the rate for national insurance costs. None of the underlying components such as doctor payments, hospital costs, prescription drug costs, or program administration show any pattern that is very different from national trends.



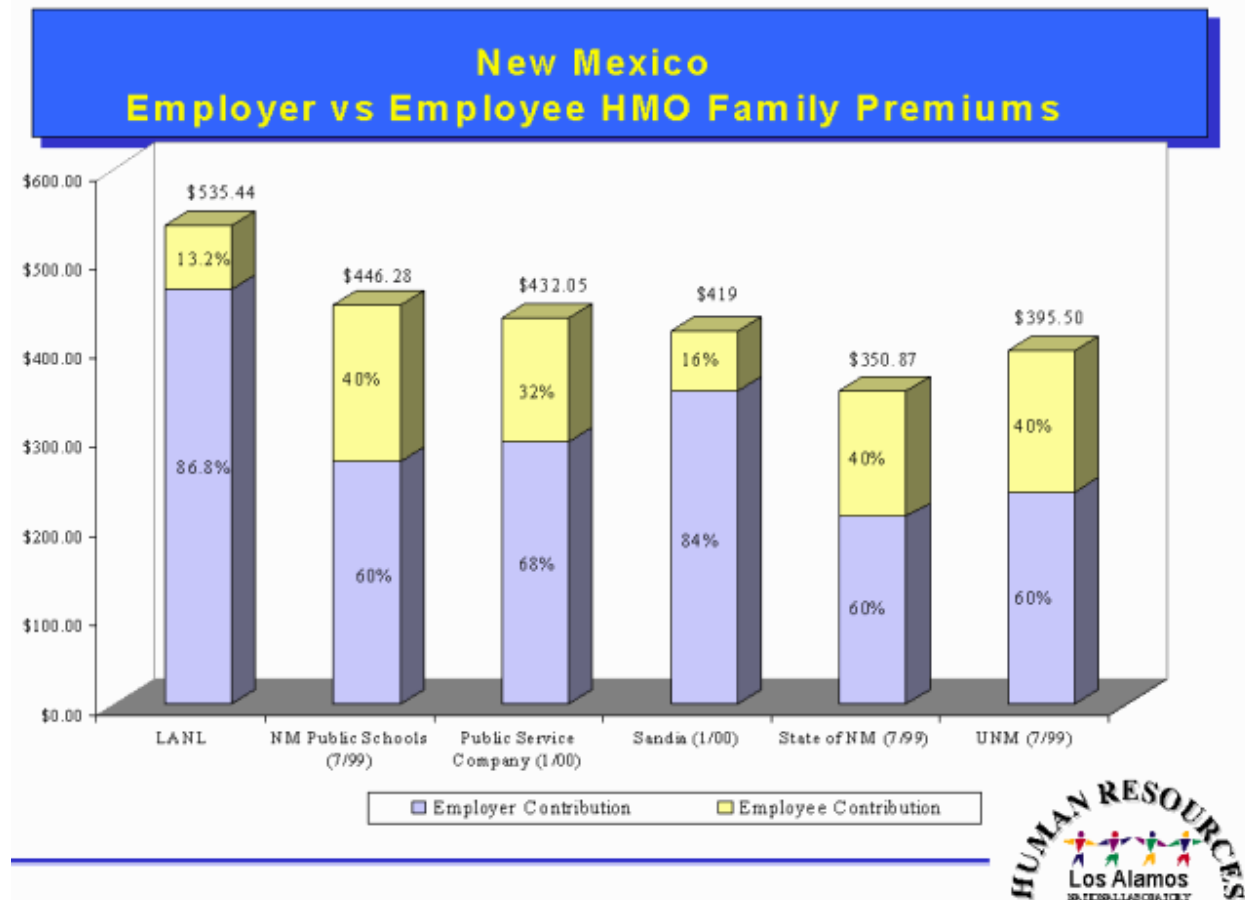
### U.S. National Health Expenditures

Total health expenditures in the U.S. amount to nearly 15% of our gross domestic product (GDP). Patterns of health expenditures in Los Alamos appear to be similar to national shares.



### U.S. Personal Health Care Expenditure Sources

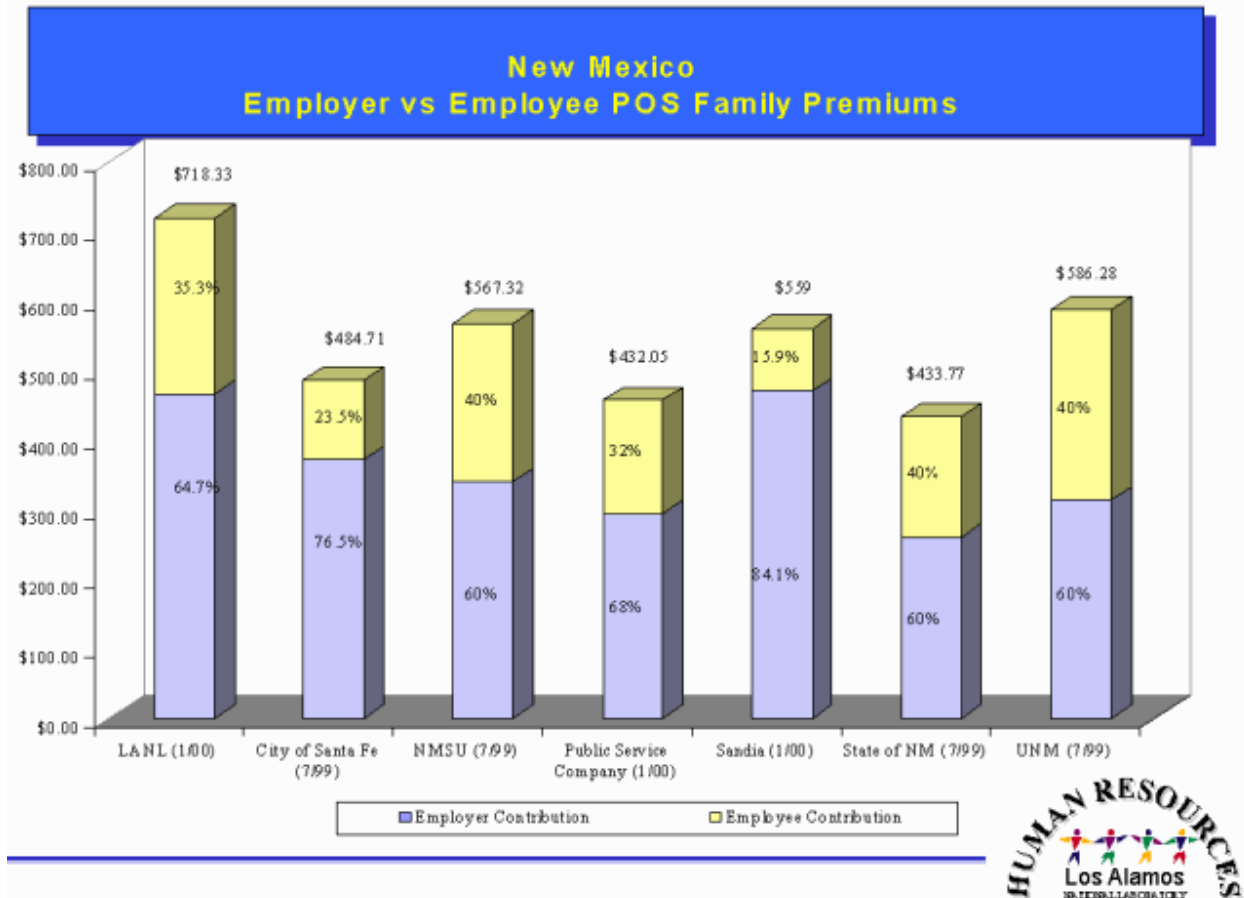
Various governments pay close to half of all personal health care expenditures in the U.S. Private health insurance pays one third and people pay 20% out of their own pockets.



Source: <http://www.hr.lanl.gov/benefits/BenefitsOverview/sld012.htm>

### New Mexico Employer vs Employee HMO Family Premiums

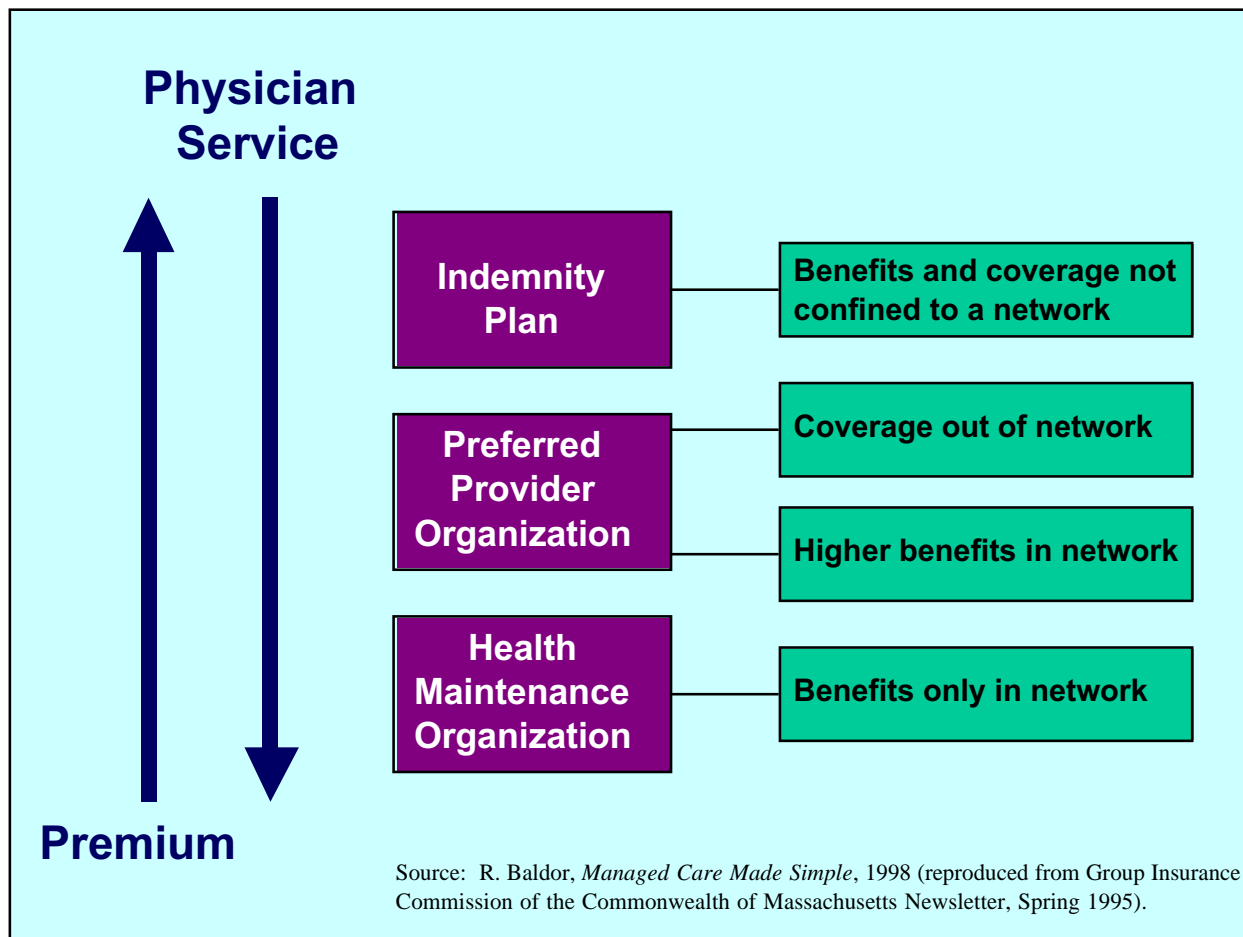
Los Alamos National Laboratory employees pay among the lowest premiums in both percentage and absolute terms of any of the major employers in New Mexico. Los Alamos employees pay about 15% of their personal insurance costs compared to a national average of 35%. Most employees are currently enrolled in the HMO plan with its lower cost than the POS plan. Many retirees on Medicare are enrolled in the Core plan which requires no member premium at all.



Source: <http://www.hr.lanl.gov/benefits/BenefitsOverview/sld013.htm>

### New Mexico Employer vs Employee POS Family Premiums

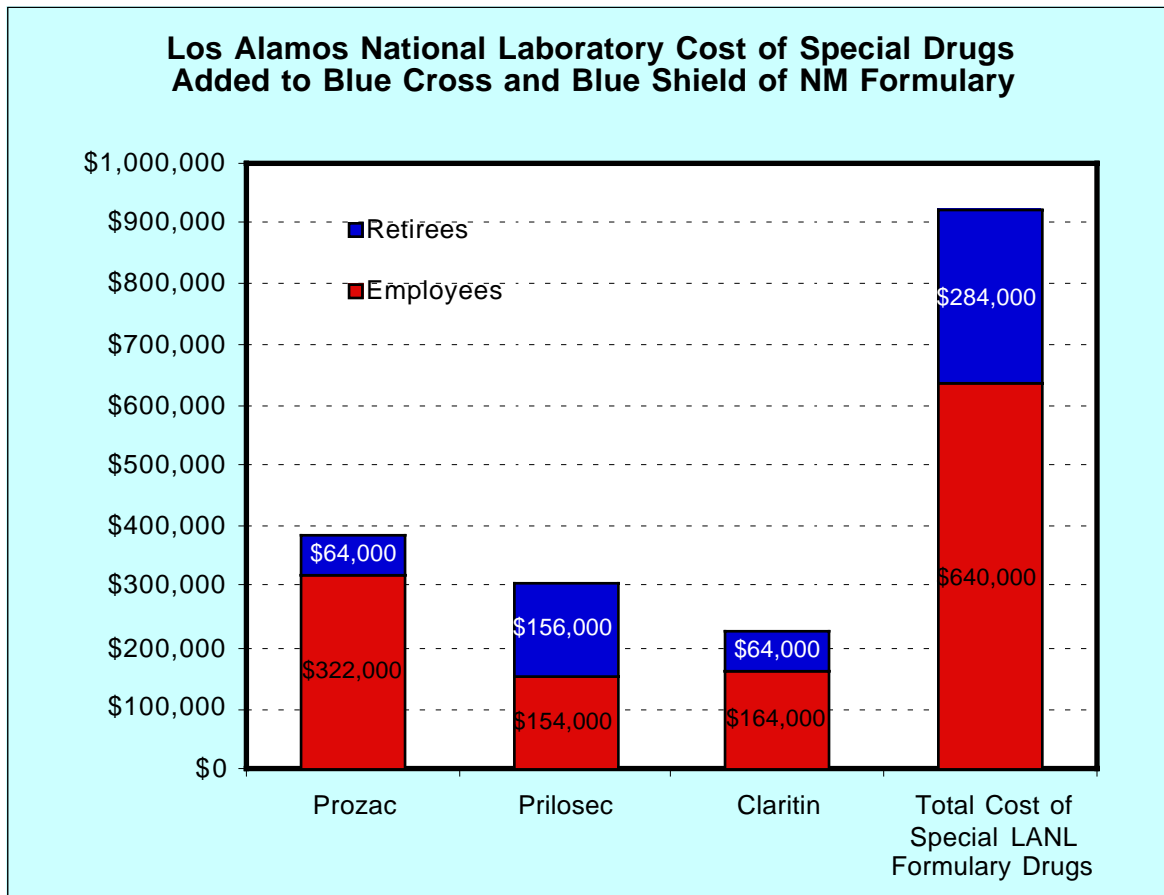
Los Alamos National Laboratory employees who elect to join the POS plan pay a percentage of the insurance premiums which is about equal to the national average. This is our highest cost plan and employees choose this believing that they will receive a better value than the HMO plan, in spite of having to pay relatively higher insurance premiums.



### Physician Service versus Premium

Cost of premium and level of physician service are tied to the benefits and coverage of the health plan that is selected. A true indemnity plan, common 10 years ago, has the highest priced premiums but provides the highest level of physician service with benefits and coverage that are not within a network. A preferred provider organization health care plan is mid level for cost of premium and level of physician service with higher benefits and coverage if services are acquired within the network. A health maintenance organization health care plan has the lowest premiums and an associated lower level of physician services and benefits available only within the agreed upon network. The mindset of many health plan enrollees is the expectation of paying HMO premiums while still obtaining the indemnity plan level services they received in the past.





### Los Alamos National Laboratory Cost of Special Drugs Added to Blue Cross and Blue Shield Formulary

The standard Blue Cross and Blue Shield formulary for New Mexico does not include the three heavily promoted prescription drugs, Prozac, Prilosec, and Claritin. Officials at Los Alamos requested that these drugs be added to the Los Alamos formulary. For the most recent year that we have data, this costs the Los Alamos plan an additional \$375,000 in annual copay revenue losses. If all patients would have switched to the next cheapest substitute on the regular Blue Cross and Blue Shield formulary, \$420,000 would have been saved.



**Pharmacy at Smith's in White Rock, New Mexico**

Prescription drug availability in Los Alamos County is quite good with five different outlets. Employees may also receive their prescriptions by mail order, if they find this to be a more convenient system.

# Physicians

The Los Alamos physicians' services market is comprised primarily of physicians in private practice. Accordingly, to the extent that managed care has come to the Los Alamos medical market, it consists of the open model. The open model is characterized by private practice physicians who have provider contracts with the medical plan administrator as opposed to the staff model in which physicians are employees of the health maintenance organization. Of physicians in private practice, approximately half are associated with either the Jemez Independent Practice Association or the Los Alamos Physician Hospital Organization. Another group of physicians whose numbers are growing are the physicians employed by Los Alamos Medical Center to operate hospital-owned practices. A small number of physicians operate private practices and are unassociated with either of the two main private practice physician's organizations. An even smaller number of physicians practice medicine at LAMC under contract to third parties (emergency room physicians). The Los Alamos National Laboratory employs several physicians in conjunction with its occupational medicine program. Finally, a number of retired physicians maintain their residence in Los Alamos and may continue some professional associations and activities.

Beyond these organizational lines, however, local physicians provide services to other counties, predominantly Rio Arriba and Santa Fe, while physicians practicing predominantly in those adjacent counties offer their services to Los Alamos. Due to the mobility of the patient population and the draw of a large employer such as Los Alamos National Laboratory, a significant number of patients who reside outside Los Alamos County obtain their medical services in Los Alamos because that is where they are during the workday. There is still a portion of LANL employees and their families who live in Rio Arriba

and/or Santa Fe counties and do not use Los Alamos medical services.

The number of physicians practicing predominantly in Los Alamos County currently stands at about 45 physicians, their numbers having grown steadily through the years since the 1940s when there were two physicians. Most physicians practicing primarily in Los Alamos possess active privileges at LAMC meaning that they have full admitting privileges. During the decade of the 1990s the number of physicians practicing in Los Alamos has remained fairly steady at this number, probably reflecting the static population of the county. The number of physicians is corroborated by databases constructed by the Health Care Study Team using information from the LAMC credentialing committee and also by the American Medical Association's National Survey of Physicians.

There is a significant number of physicians practicing in Los Alamos whose main or core practice is elsewhere, primarily Santa Fe. These physicians often possess courtesy privileges at LAMC, which means that they make less than 12 admissions to the hospital in any given year. These physicians enrich the local community by providing additional specialty services and increasing the amount of choice available to patients in Los Alamos. The numbers of such courtesy physicians have increased during the decade of the 1990s so that in 1999 there were more than 20 such physicians practicing part-time in Los Alamos.

A third category of hospital privilege is held by consulting physicians who do not usually reside in Los Alamos or have admitting privileges at LAMC but do serve as resources and referrals for specialties not available in Los Alamos. When consulting physicians are added to active and courtesy physicians, the physician pool for Los Alamos grows to approximately 80.

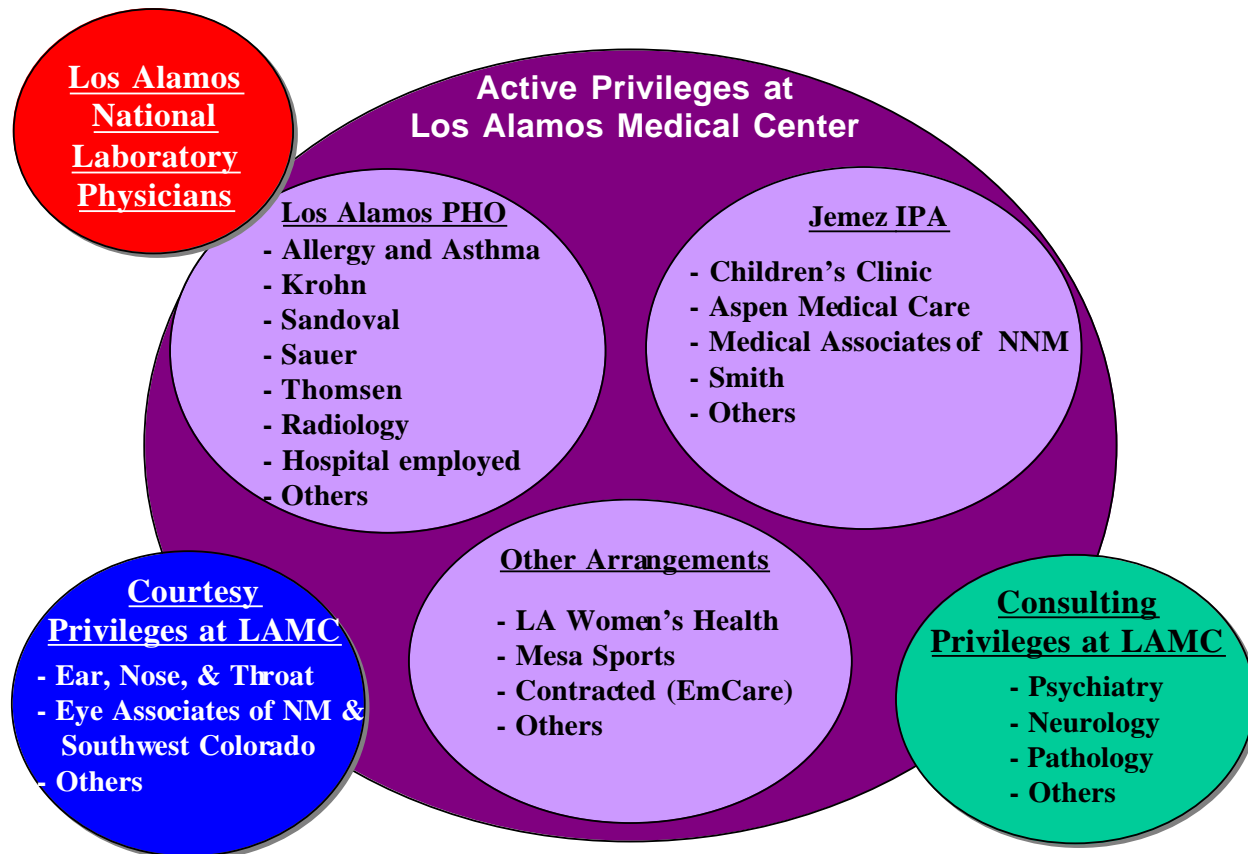
Most, but not all of the physicians in Los Alamos are directly involved in patient care activities. There are approximately four physicians employed at Los Alamos National Laboratory who, while they do see patients are

## Physicians

not in private practice and are available only to Los Alamos National Laboratory employees in special Occupational Medicine monitoring programs. There are a few retired physicians remaining in Los Alamos who have maintained some level of professional association and therefore appear in the AMA database.

Insofar as numbers of physicians, Los Alamos is well served. This is a rough indicator of the attraction provided by the community and its amenities to members of the medical profession. In terms of statewide statistics, Los Alamos County ranks third in the number of physicians per capita behind Bernalillo County (Albuquerque) and Santa Fe County.

## Los Alamos Physicians' Services Market



### Los Alamos Physicians' Services Market

This chart shows the organization of the physicians' services market at the beginning of 2000. The chart also shows the membership of local physicians in professional associations.

Approximately 40 physicians with active privileges at Los Alamos Medical Center (more than 12 admissions per year) constitute the largest number of physicians operating in the market. A large number of these physicians are internal medicine or family practice specialists. Almost all of the physicians in Los Alamos perform as primary care providers even though they may have a specialty by training and/or board certification. Physicians with courtesy privileges (about 15 to 20) at Los Alamos Medical Center are categorized by having fewer than 12 admissions per year. Consulting privileges do not permit admissions and pertain to the provision of occasional consultation services, but do add to the available types of specialists and services in the county. The Los Alamos National Laboratory employs four physicians in conjunction with its Occupational Medicine program, but these doctors do not perform private services.



### **Los Alamos Medical Center**

Most Los Alamos County physicians have offices in Los Alamos Medical Center. A few doctors have located in the downtown area in recent years and the annex to the LAMC recently opened creating new space within the main medical complex.





**Physician Privileges Database for Los Alamos Medical Center**

Analysts developed a database describing Los Alamos physicians with various categories of privileges at the Los Alamos Medical Center. The source of the data was the hospital privilege report form used by the Credentialing Committee of the physicians. The data was charted for each year from 1991 to 1999, the last year for which data was available. This data was included because it was our most detailed information about local practitioners. It has been used extensively to examine the issues of numbers of doctors, numbers of specialists, demographics, turnover, and other metrics of interest.



### **Pojoaque Health Care Center**

Physicians are located at various small clinics in the surrounding area. The Pojoaque clinic is just one example of these small centers. LAMC maintains its own outreach services and clinics in several locations in the Chama River Valley and the Rio Grande Valley. Major centers where Los Alamos National Laboratory employees frequently obtain medical care are found in Española and Santa Fe.



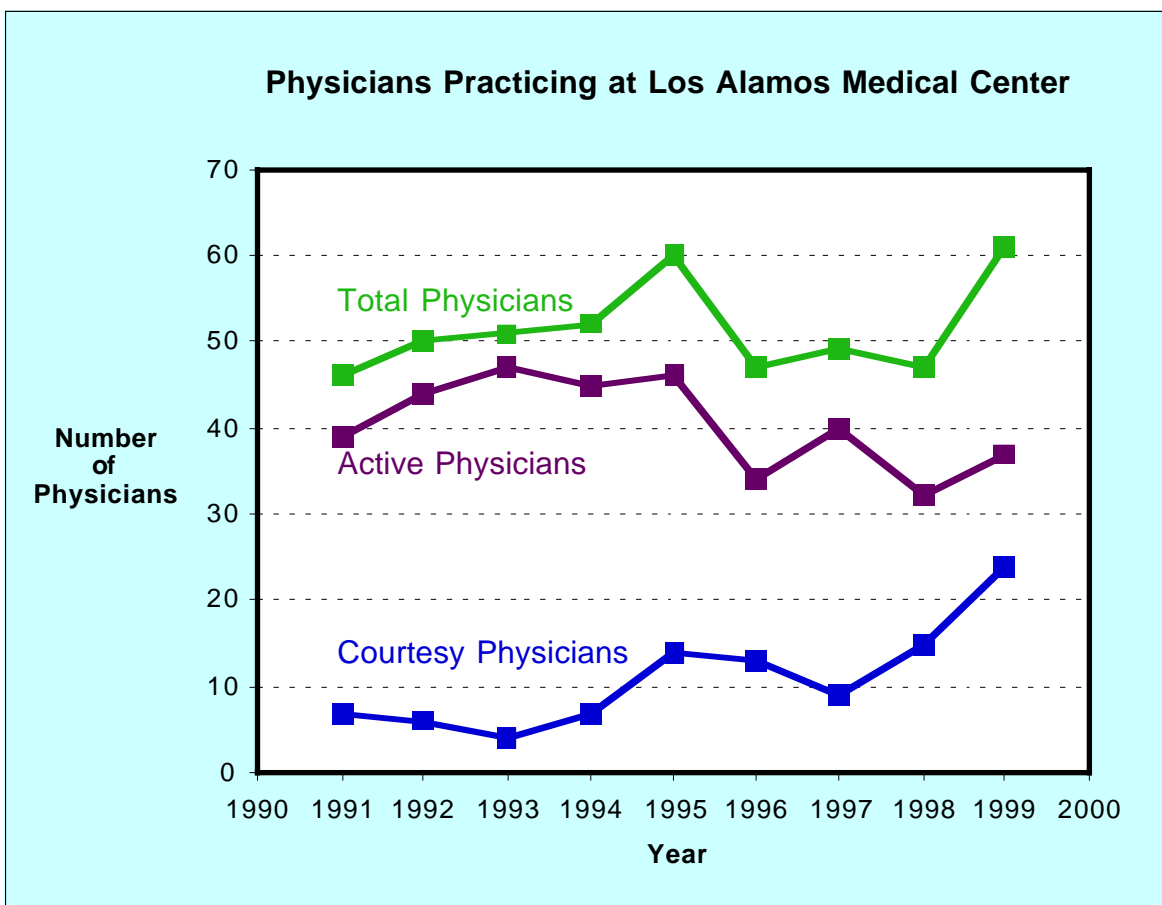
### **Los Alamos Medical Center Family Care Center**

LAMC maintains a full-time branch clinic in the city of Española. Los Alamos Medical Center's system of non-Los Alamos County clinics is used to increase their market reach and business for the main medical center.



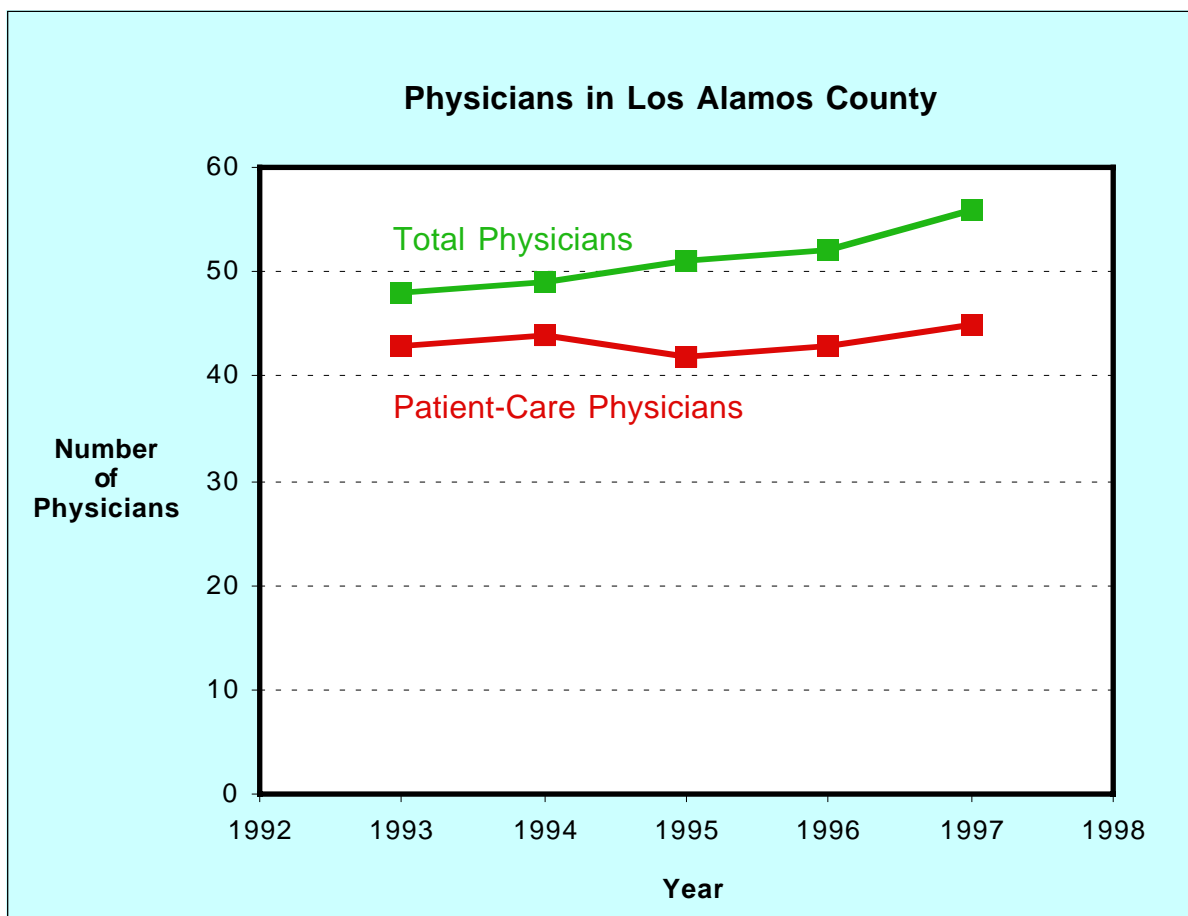
### **Occupational Medicine**

Los Alamos National Laboratory maintains an on-site clinic to deal with all manner of work related medical problems. Employees also obtain minor medical treatment and diagnoses that are not work related during working hours. This clinic used to perform many more routine physicals for all employees but has reduced its level of nonwork related services over the last 10 years.



### Physicians Practicing at Los Alamos Medical Center

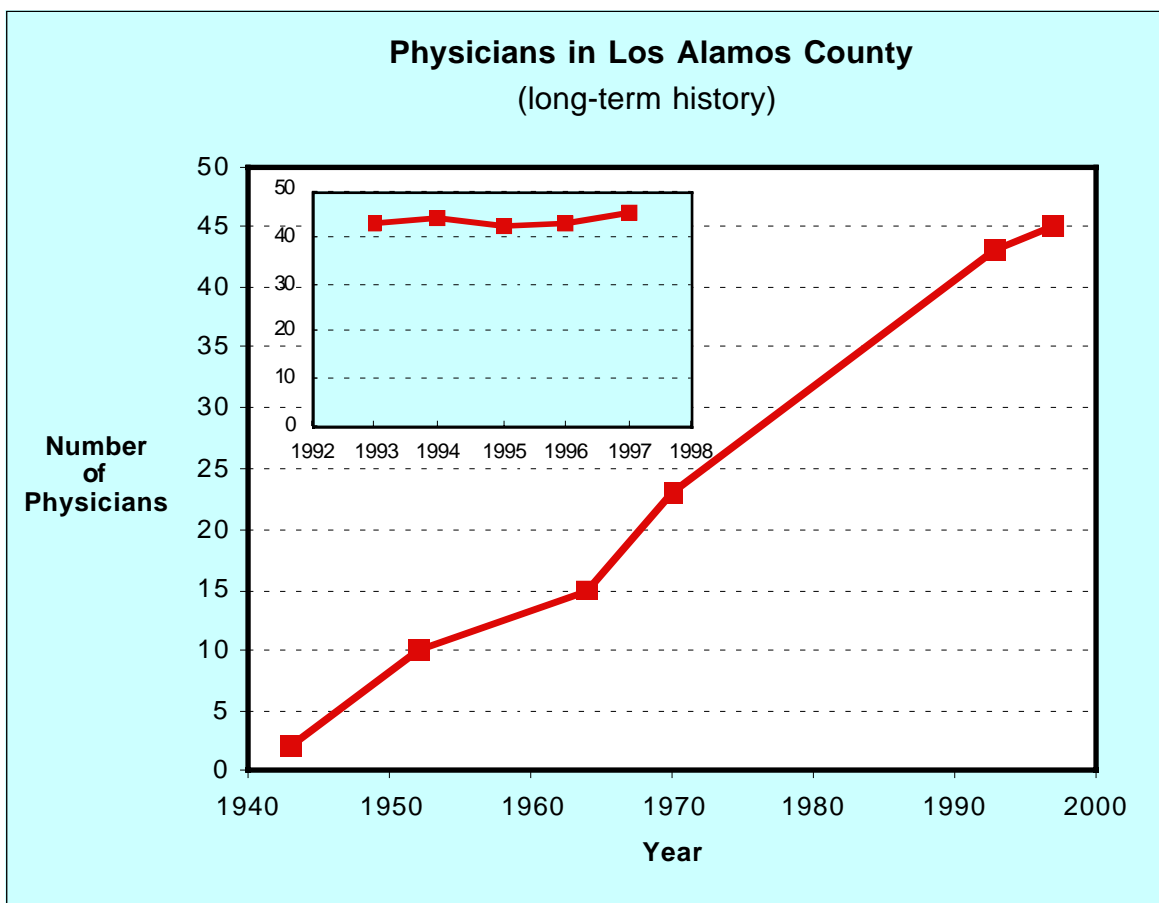
This line graph shows the breakdown between physicians with active and courtesy privileges practicing at the Los Alamos Medical Center during the decade of the 1990s. Physicians with courtesy privileges add to the total numbers of physicians available to service Los Alamos patients. For most of the decade the total number of physicians remained at around 50. The number increased to above 60 in 1999 due to increases in both the active and courtesy categories. Fluctuations in the numbers should not be taken too seriously as the practice of classifying privileges varies from year to year. The data reflected in this chart is based upon the physician privileges database. A problem with this database is that physicians without LAMC admissions privileges are missing. For example, LAMC currently makes no psychiatric admissions, so the psychiatrists are not counted anymore, although they still actively practice in Los Alamos. The detail and quality of this data is the highest available. However, for many other analyses we use AMA doctor databases because they consistently compare physicians across regions and communities, whereas the privileges database is unavailable for these other locations. It is quite clear from the data that Los Alamos has not been losing its physicians.



### Physicians in Los Alamos County

The AMA physician's master file indicates that Los Alamos County has not been losing physicians. Most of our community comparison analyses rely upon AMA databases. In most cases, we focus on patient-care physicians because they are the ones providing medical services to patients. Total physicians include administrators, teachers, nonpracticing doctors, and even retired doctors. A problem with the AMA database is that it does not count non-AMA doctors. Currently, Los Alamos has a podiatrist (Doctor of Podiatry) and two doctors of osteopathy (D.O.) who are not recognized in the AMA data.





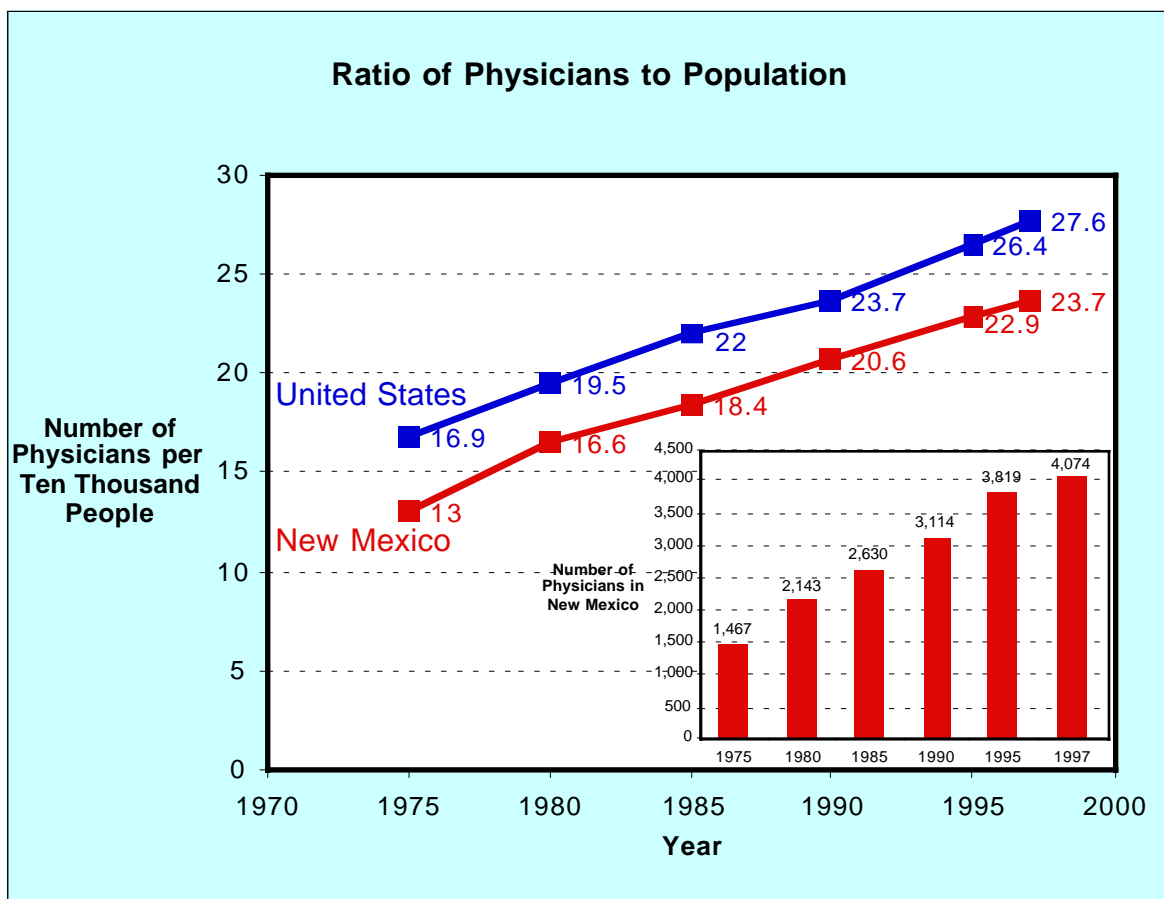
### Physicians in Los Alamos County (long-term history)

The long-term history of doctors in Los Alamos shows a steady increase in their numbers. Further analyses show that the number of physicians in Los Alamos County on a per capita basis have maintained the same relative service level as is found nationally. For example, since 1970 the national number of doctors per capita has risen 69% and the Los Alamos number of doctors per capita has risen by 67%. There never has been and currently is no crisis or anything other than normal behavior in terms of the trend of doctors available in Los Alamos County. As shown later, Los Alamos County enjoys an extraordinarily high number of doctors per capita for a town with such a small population.



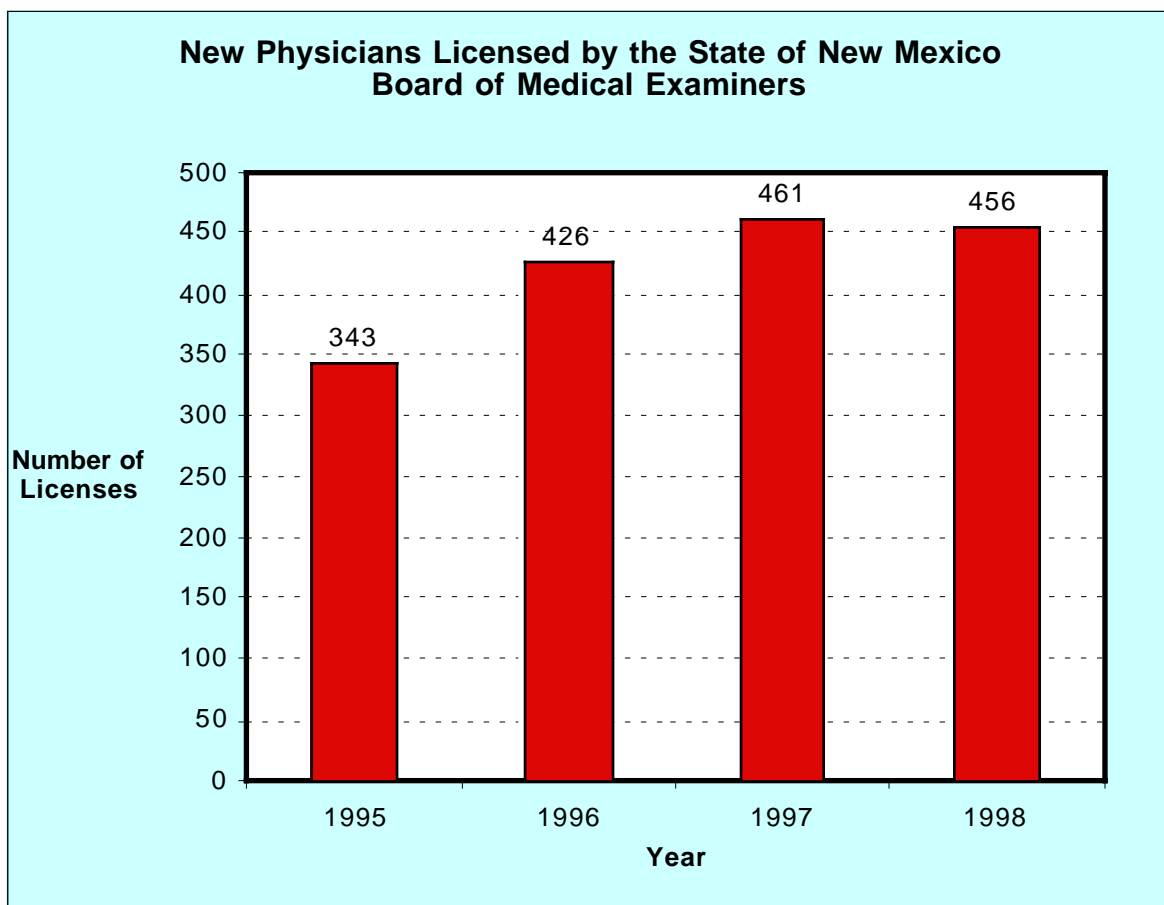
**Article from Albuquerque Journal, “Many Docs Sick of State, . . .”**

Frequent scary stories about doctors leaving the state of New Mexico are about as common as the frequent scary stories about doctors leaving Los Alamos County. Simple data, counting the number of doctors reveals in both cases that the scary stories are unjustified and the number of doctors continues to rise.



### Ratio of Physicians to Population

The trend lines plotting the ratio of physicians to population in the United States and New Mexico track each other almost perfectly since 1975. The insert graph shows the absolute number of physicians in New Mexico at each of the data point years.

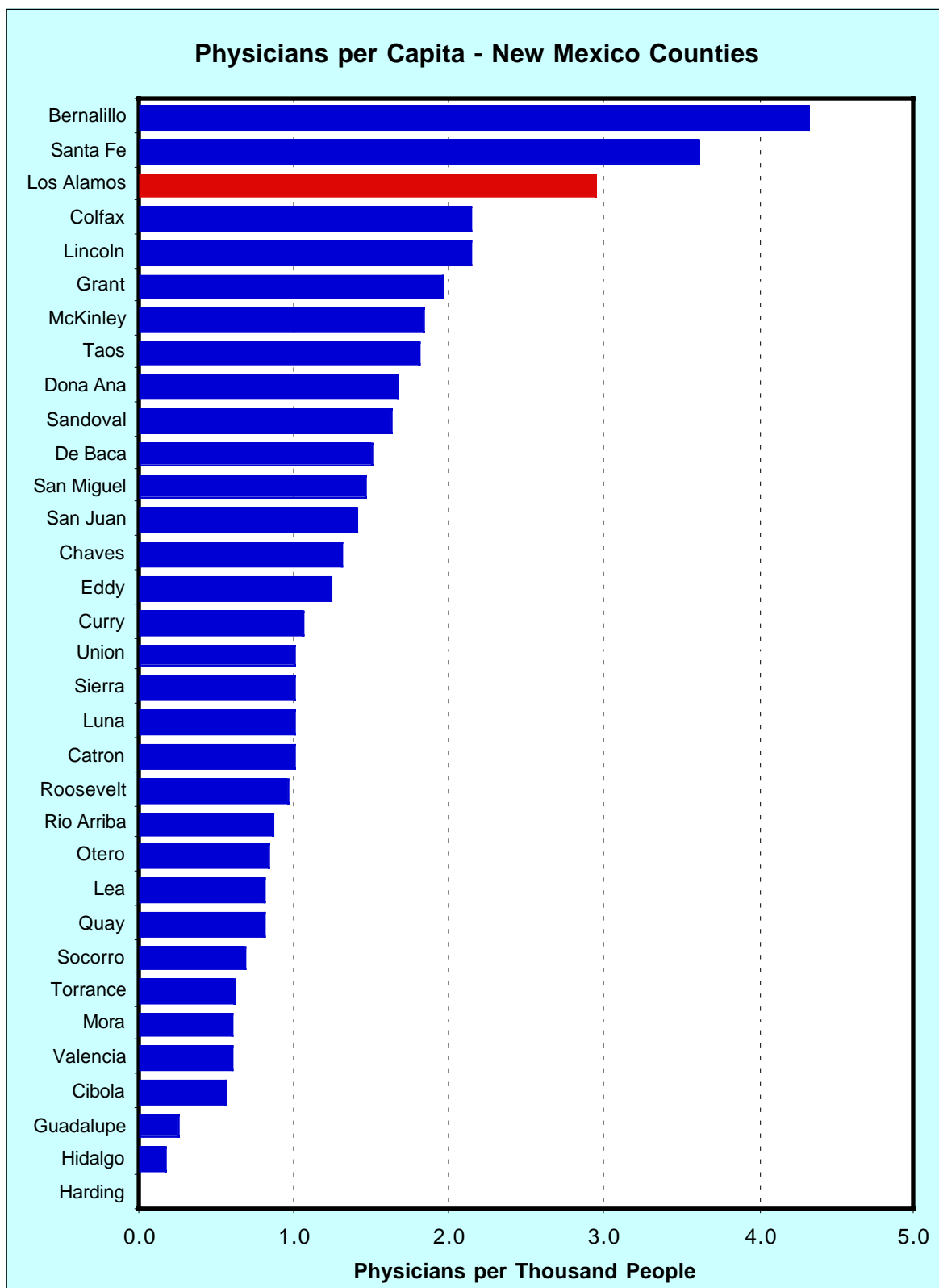


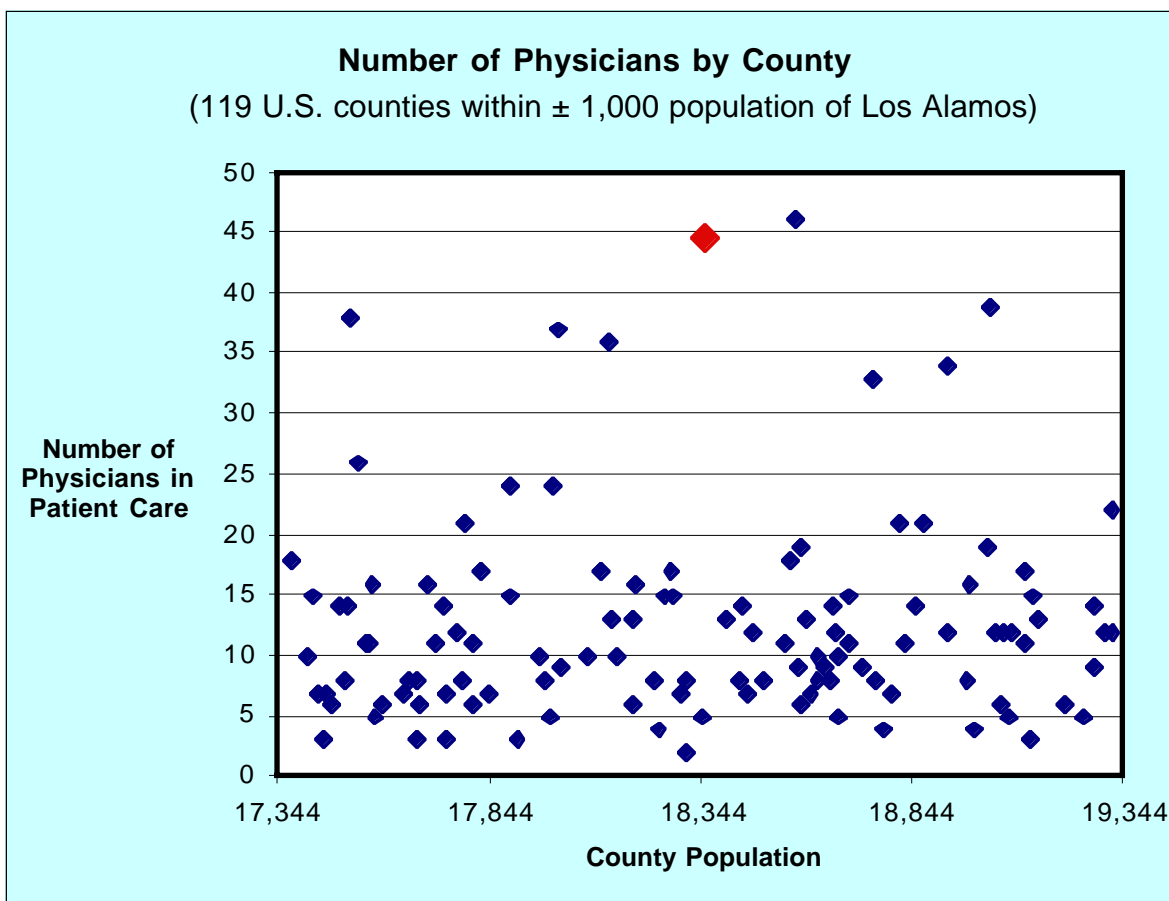
#### **New Physicians Licensed by the State of New Mexico Board of Medical Examiners**

This chart shows the number of newly licensed physicians who recently completed their internships, residencies, or established physicians relocating practices in New Mexico. The numbers of new licensees per year from 1996 to 1998 exceed 10% of the total number of physicians presently in the state. This provides another indication how the inflow of physicians into New Mexico exceeds the outflow and that on a net basis, the number of physicians in the state is increasing.

**Physicians per Capita – New Mexico Counties**

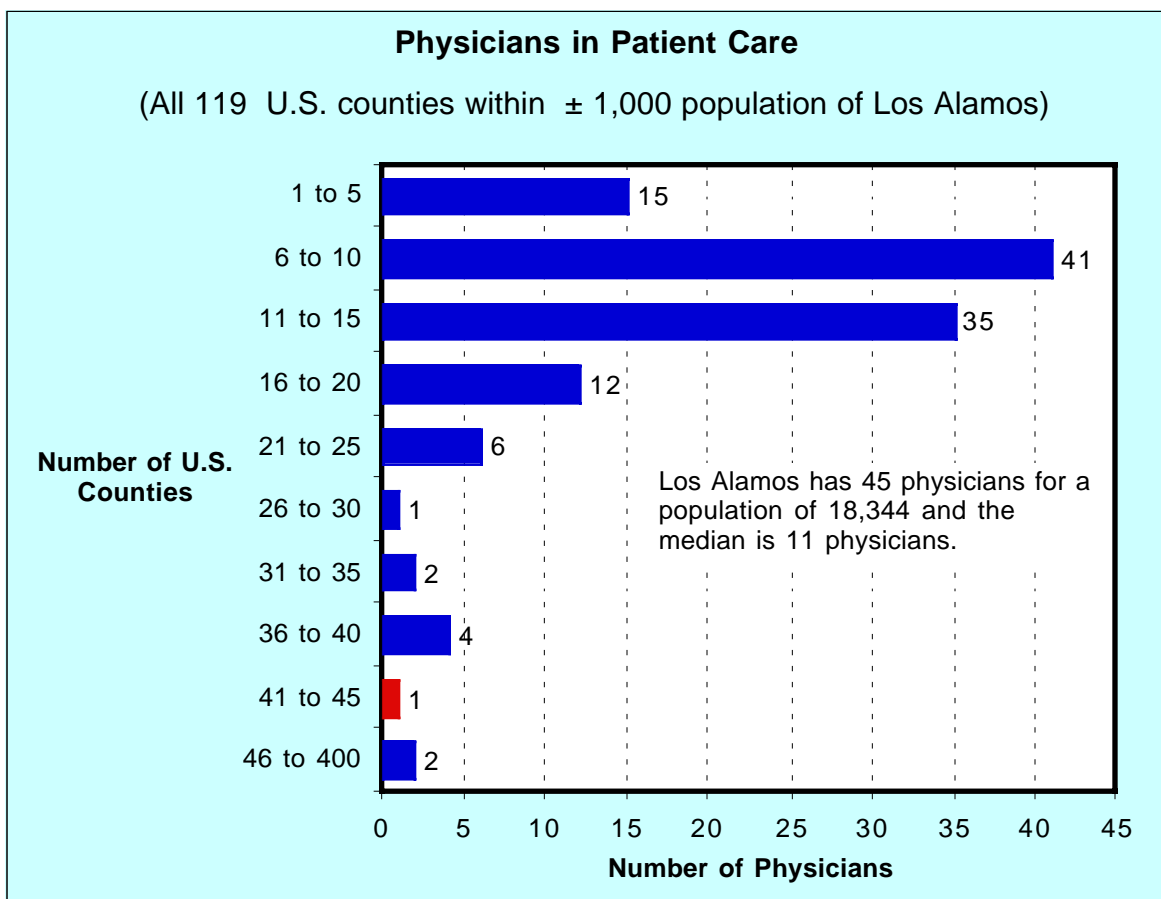
American Medical Association data was used to calculate the number of physicians per capita for all of New Mexico's counties. The top three New Mexico counties in terms of the largest number of physicians per capita are Bernalillo, Santa Fe, and Los Alamos. Los Alamos ranks at about the national average of physicians per capita. Except for the top three counties, the rest of New Mexico falls well below average in terms of numbers of physicians per capita.





### Number of Physicians by County

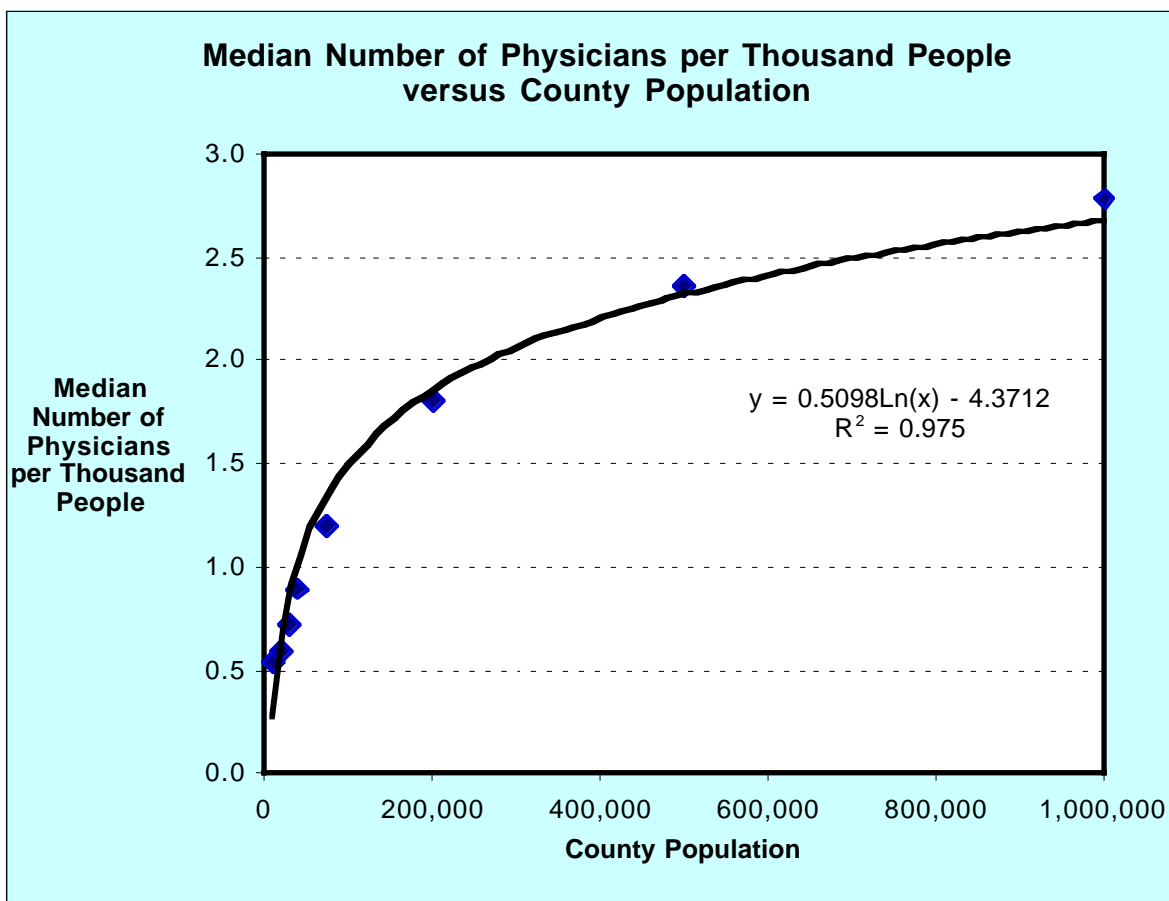
We defined our own database containing all counties in the U.S. having a population within  $\pm 1,000$  people of Los Alamos' 1998 census of 18,344. This set of comparably sized communities was used to make many comparisons of Los Alamos' particular circumstances. This graph shows the actual number of doctors currently practicing in each of these 119 counties. The median number of doctors found in these counties is 11. Los Alamos has 45. Only two counties have more doctors than Los Alamos. Waynesboro, Virginia has 46 doctors and is adjacent to the middle Shenandoah Valley Medical Center. Montour, Pennsylvania has almost 400 doctors (which we could not plot on this graph) and includes a 272-bed state hospital plus the 548-bed Geisinger Medical Center. Most other counties of our size have far fewer doctors.



### Physicians in Patient Care

Los Alamos has a high number of doctors given its population base.





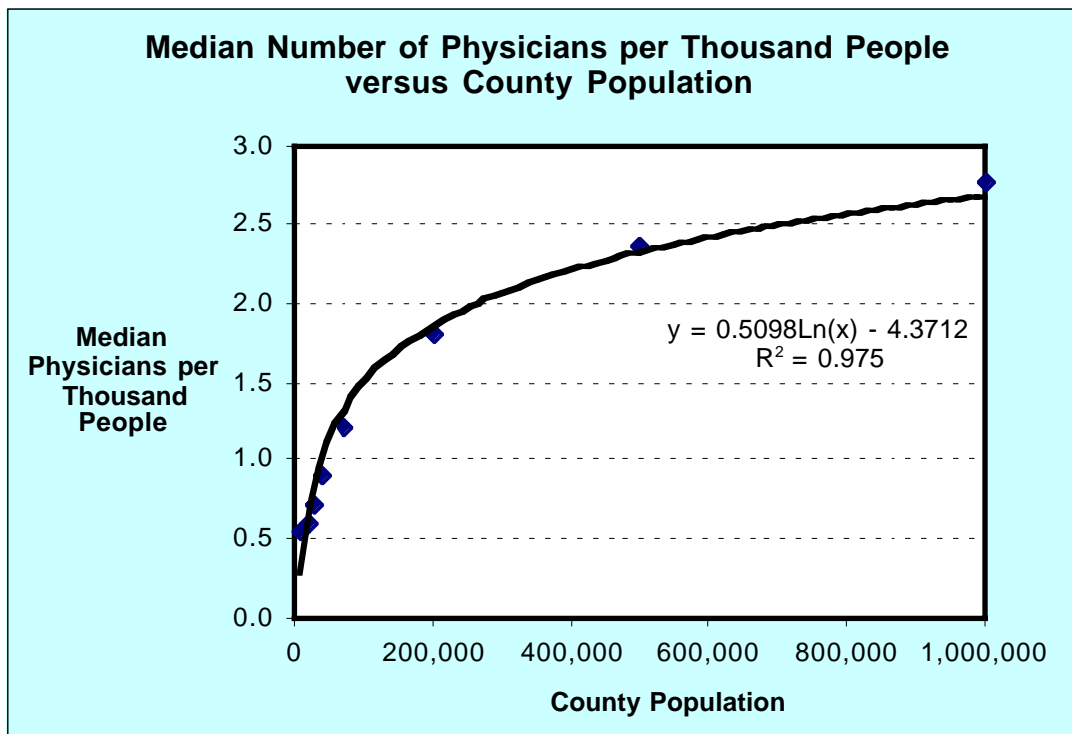
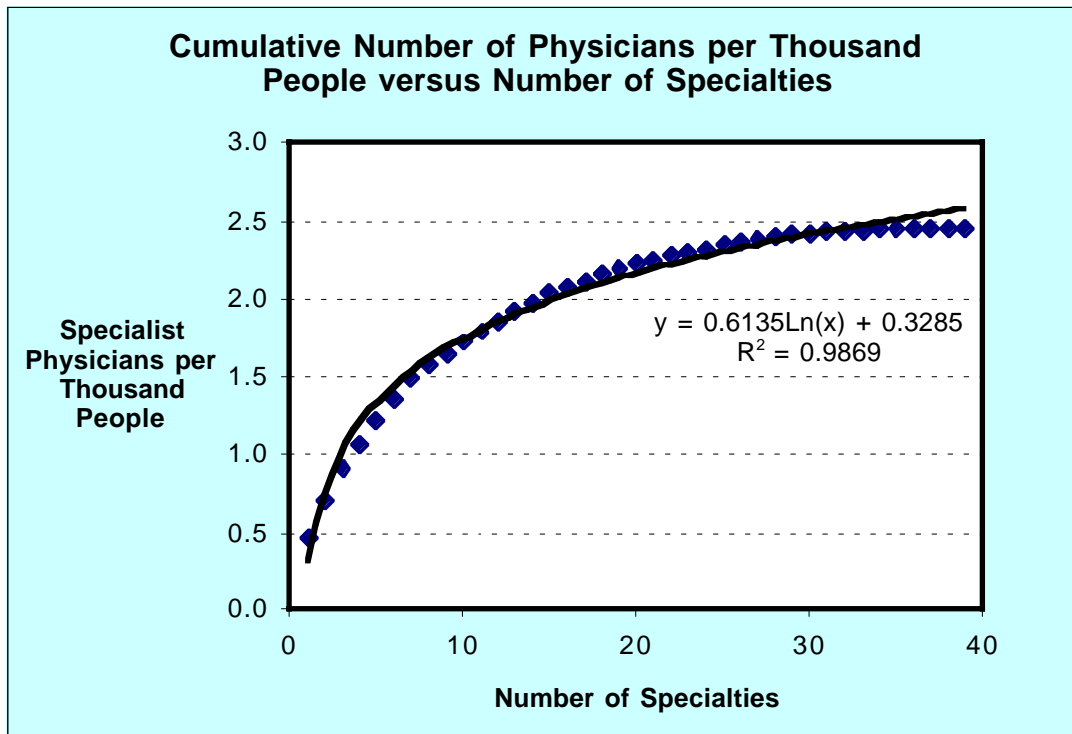
### Median Number of Physicians per Thousand People versus County Population

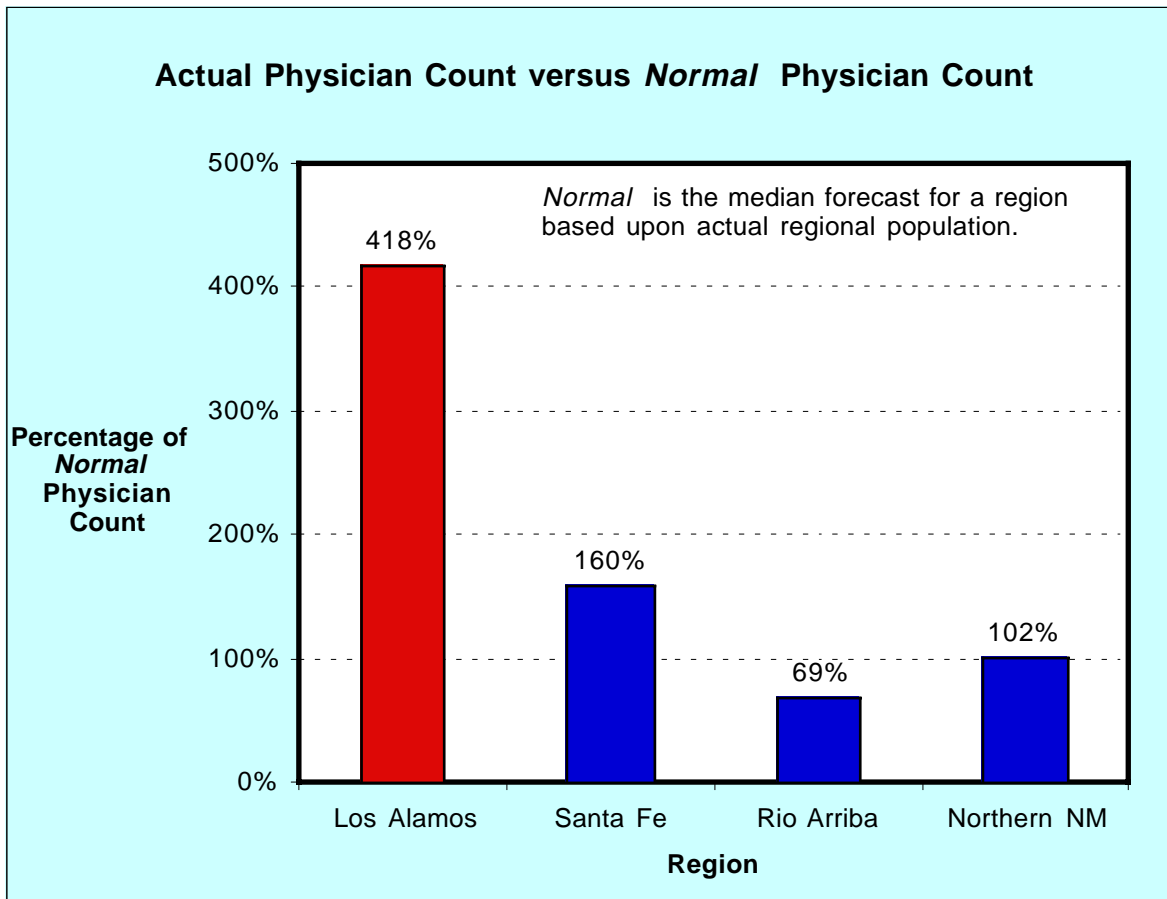
Data was employed to calculate the median number of physicians per capita by county for the entire U.S. Smaller communities can support fewer physicians per capita than much larger ones. Although this is well known, this relationship has never been quantified before. Each point on the chart represents the median number of physicians per capita for about 50 to 80 counties in the U.S. having the specified population level. The curve linking these data points shows that there is a logarithmic relationship between population and physicians per capita. The underlying pattern is extremely strong although it does not predict a precise number of physicians for each particular county, but rather a central tendency. The actual number of physicians depends upon the type and size of the medical establishment in surrounding areas as well. Based on this relationship, the median number of physicians per capita for a county with a population of Los Alamos would be expected to be approximately 0.6 physicians per capita. In fact, Los Alamos has 2.5 physicians per capita. This clearly indicates that Los Alamos is uncommonly well served by physicians, and provides a significant attraction as a place for physicians to practice.

**Cumulative Number of Physicians per Thousand People versus Number of Specialties  
and**

**Median Number of Physicians per Thousand People versus County Population**

Underpinning the logarithmic relationship of physicians per capita versus county population is an analogous relationship involving physician specialists. Communities with very small populations can only support a few doctors. The first specialists to become available are those from the specialties with the largest national numbers, internal medicine, family practice, and pediatrics. Only the very largest communities can support the rare specialties such as forensic pathology, thoracic surgery, or medical genetics. Graphing these facts, by adding first the most numerous specialists and continuing in order of commonness of specialties, produces a cumulative distribution with a logarithmic shape that is strikingly similar to the distribution of physicians by county size. This is the conceptual explanation for the physician versus county population relationship. This relationship generalizes to other population groupings such as the patient base needed to support a full spectrum of specialists in an HMO or closed medical system. Reasonably full coverage by a spectrum of specialists requires a population base in the 300,000 to 500,000 range.

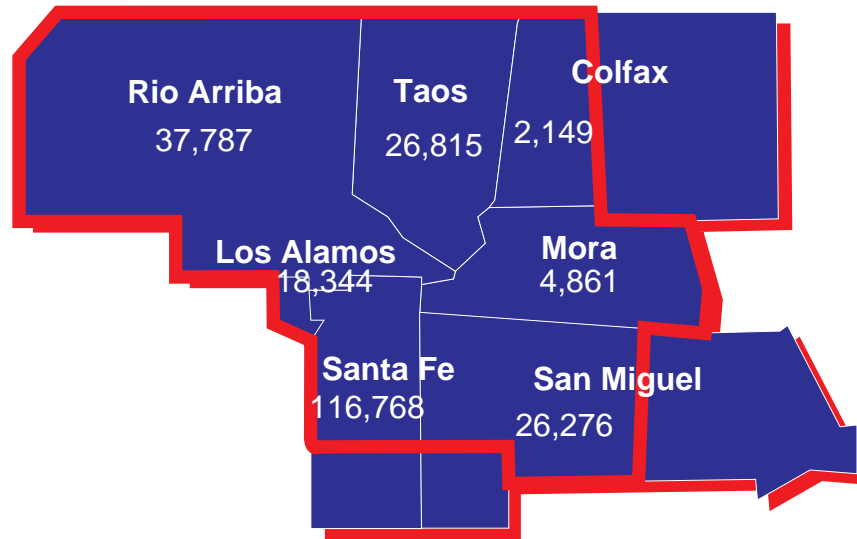




#### **Actual Physician Count versus Normal Physician Count**

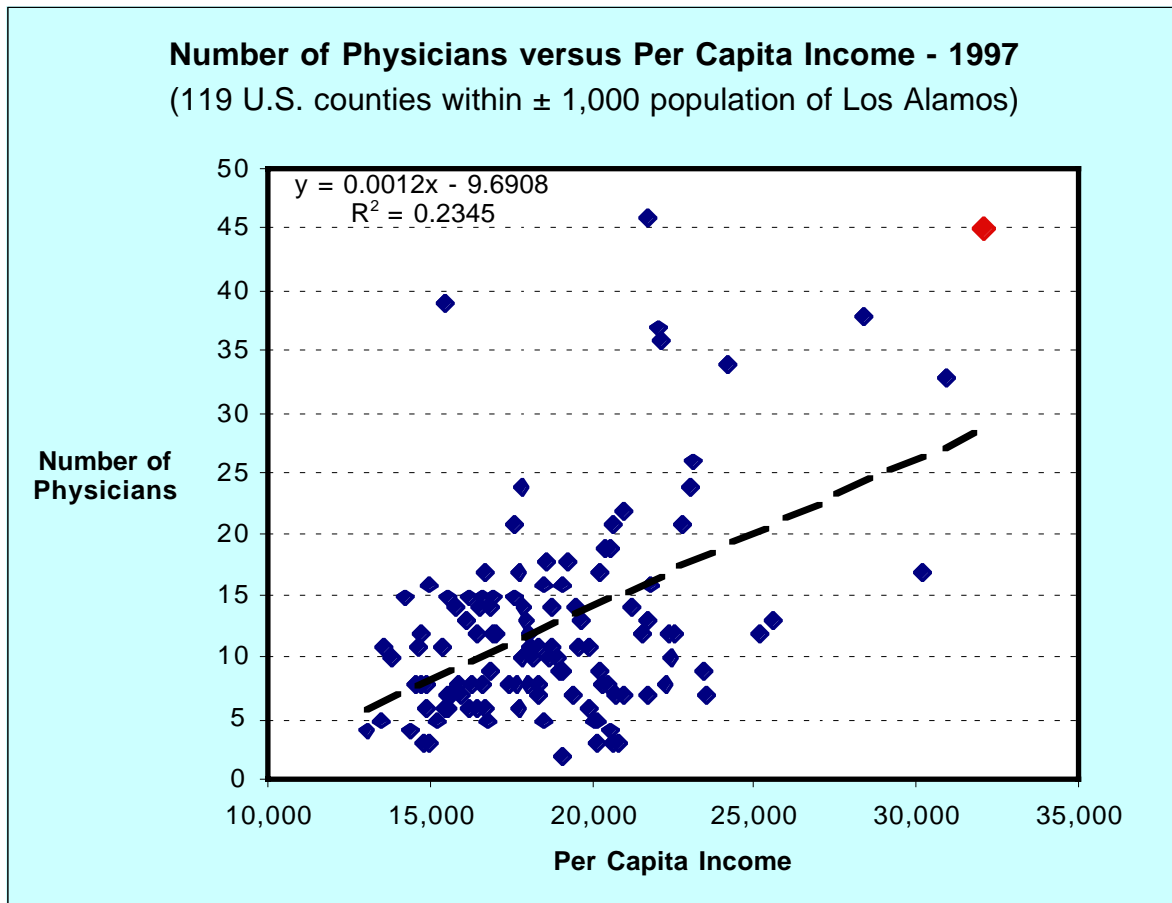
Los Alamos has about four times the median number of physicians expected given its population of 18,344. Santa Fe has about 60% more physicians than its population would normally support. The other communities in northern New Mexico all have fewer physicians than the median numbers found in similar size towns. Looking at the northern New Mexico region as a whole the actual number of doctors is almost exactly equal to the median number of doctors supported by the total population size. Medical services must be looked at on a regional basis because there is much sharing across community lines until very large-sized communities are formed.

## Northern NM Population by County (1998 Total: 233,000)



### Northern New Mexico Population by County

The northern New Mexico economic region is defined by all people who are closer in driving time to Santa Fe than to Albuquerque and has a population of 233,000 people. This region has almost exactly the number of doctors that would be found in a median U.S. community of the same population size.



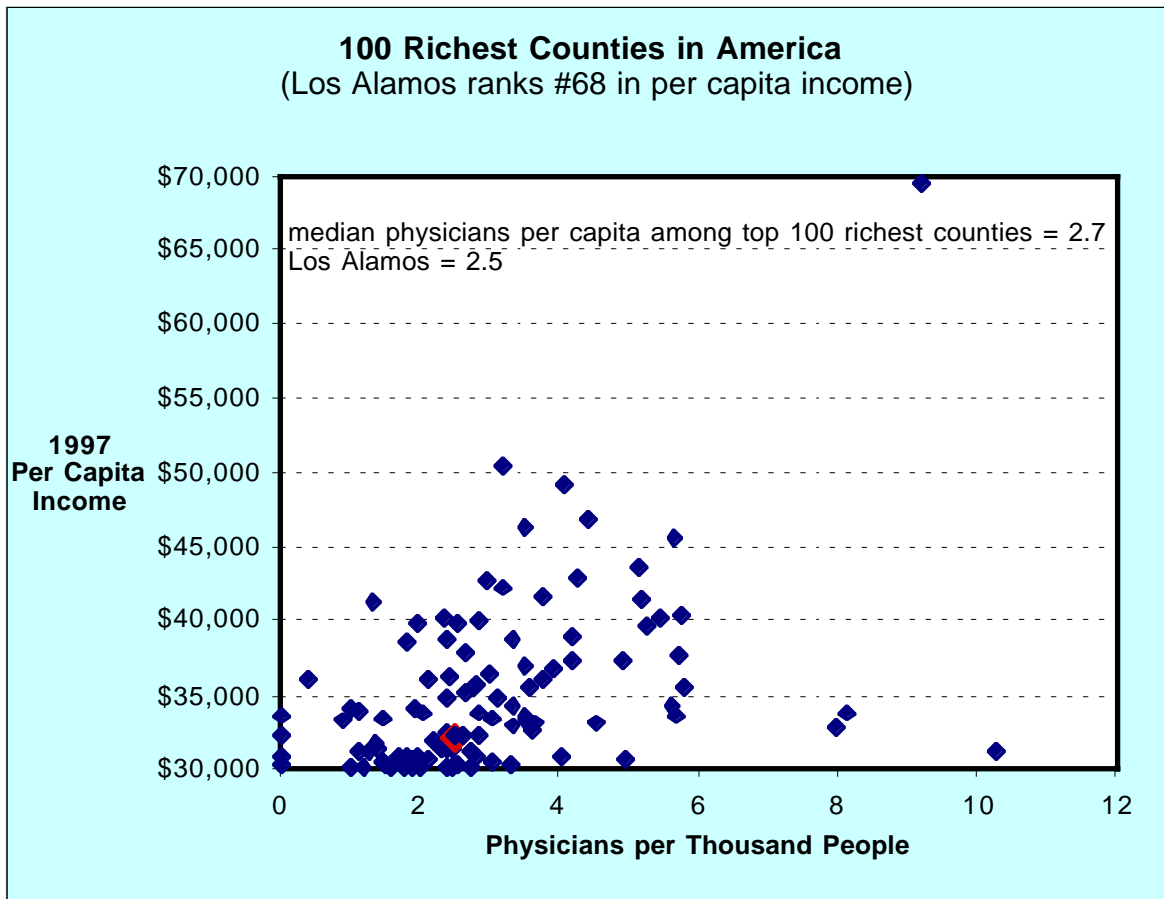
### Number of Physicians versus Per Capita Income – 1997

Per capita income is a negligible factor in determining the number of physicians or other medical services in communities the size of Los Alamos. This answers a frequently asked question about Los Alamos' (red diamond) purportedly higher use of medical services as a result of its high income. High income is not an important factor.

Approximately One Hundred of the Highest Income Counties in America					
Rank	County	Per Capita Income (1997)	Rank	County	Per Capita Income (1997)
1	New York, NY	\$69,686	54	Collin, TX	\$33,540
2	Fairfield, CT	\$50,423	55	Waukesha, WI	\$33,511
3	Pitkin, CO	\$49,266	56	Stanton, KS	\$33,318
4	Marin, CA	\$46,936	57	Blaine, ID	\$33,272
5	Somerset, NJ	\$46,392	58	Howard, MD	\$33,127
6	Westchester, NY	\$45,595	59	Talbot, MD	\$33,123
7	Alexandria, VA	\$43,676	60	Hartford, CT	\$32,989
8	Bergen, NJ	\$43,123	61	Washtenaw, MI	\$32,830
9	Morris, NJ	\$42,913	62	Essex, NJ	\$32,581
10	Teton, WY	\$42,311	63	San Juan, WA	\$32,542
11	Arlington, VA	\$41,708	64	Loving, TX	\$32,305
12	Montgomery, MD	\$41,539	65	New Castle, DE	\$32,295
13	Nantucket, MA	\$41,240	66	Mecklenburg, NC	\$32,295
14	San Francisco, CA	\$40,357	67	Dallas, TX	\$32,270
15	Lake, IL	\$40,260	68	Los Alamos, NM	\$32,095
16	Montgomery, PA	\$40,249	69	Eagle, CO	\$31,890
17	San Mateo, CA	\$39,989	70	Loudon, VA	\$31,748
18	Fairfax/Falls Church, VA	\$39,951	71	St. Johns, FL	\$31,458
19	Hunterdon, NJ	\$39,830	72	Boulder, CO	\$31,393
20	Nassau, NY	\$39,691	73	Middlesex, CT	\$31,393
21	Oakland, MI	\$38,913	74	Putnam, NY	\$31,334
22	Du Page, IL	\$38,826	75	Napa, CA	\$31,281
23	Palm Beach, FL	\$38,772	76	Douglas, NV	\$31,243
24	Chester, PA	\$38,708	77	Faquier, VA	\$31,228
25	Santa Clara, CA	\$37,856	78	Richmond, VA	\$31,207
26	Fulton, GA	\$37,800	79	New Haven, CT	\$30,935
27	Norfolk, MA	\$37,436	80	Litchfield, CT	\$30,924
28	Middlesex, MA	\$37,326	81	Summit, CO	\$30,894
29	King, WA	\$36,971	82	Middlesex, NJ	\$30,881
30	Johnson, KS	\$36,845	83	Essex, MA	\$30,866
31	Mercer, NJ	\$36,598	84	Sherman, TX	\$30,863
32	Martin, FL	\$36,301	85	Wake, NC	\$30,790
33	Wichita, KS	\$36,218	86	Bucks, PA	\$30,767
34	Collier, FL	\$36,210	87	Davidson, TN	\$30,723
35	Hamilton, IN	\$36,117	88	Rockingham, NH	\$30,499
36	Ozaukee, WI	\$35,879	89	Delaware, PA	\$30,452
37	D.C.	\$35,704	90	Midland, TX	\$30,439
38	Hennepin, MN	\$35,667	91	Rockwall, TX	\$30,418
39	Sarasota, FL	\$35,654	92	Ketchikan Gateway, AK	\$30,396
40	Union, NJ	\$35,257	93	Suffolk, NY	\$30,330
41	Indian River, FL	\$34,997	94	Bristol, RI	\$30,328
42	Summit, UT	\$34,953	95	Geauga, OH	\$30,264
43	Rockland, NY	\$34,367	96	Cobb, GA	\$30,263
44	St. Louis, MO	\$34,350	97	Delaware, OH	\$30,252
45	Douglas, CO	\$34,264	98	Washoe, NV	\$30,214
46	Arapahoe, CO	\$34,233	99	Barnstable, MA	\$30,199
47	Dallam, TX	\$33,990	100	Harris, TX	\$30,192
48	Monmouth, NJ	\$33,952	101	Atlantic, NJ	\$30,187
49	Contra Costa, CA	\$33,869	102	Goochland, VA	\$30,135
50	Suffolk, MA	\$33,860	103	Orange, CA	\$30,115
51	Bristol Bay, AK	\$33,769			
52	Williamson, TN	\$33,760			
53	Denver, CO	\$33,727			

### The Highest Income Counties in America

This table shows the per capita income for the 103 richest counties in America. Los Alamos ranks number 68 out of about 3,200 counties.



### One Hundred Richest Counties in America

There is no relationship between the number of physicians per capita and the per capita income in the richest counties in America. This again demonstrates that the average use and availability of medical services does not depend on personal income. Los Alamos is the red diamond.



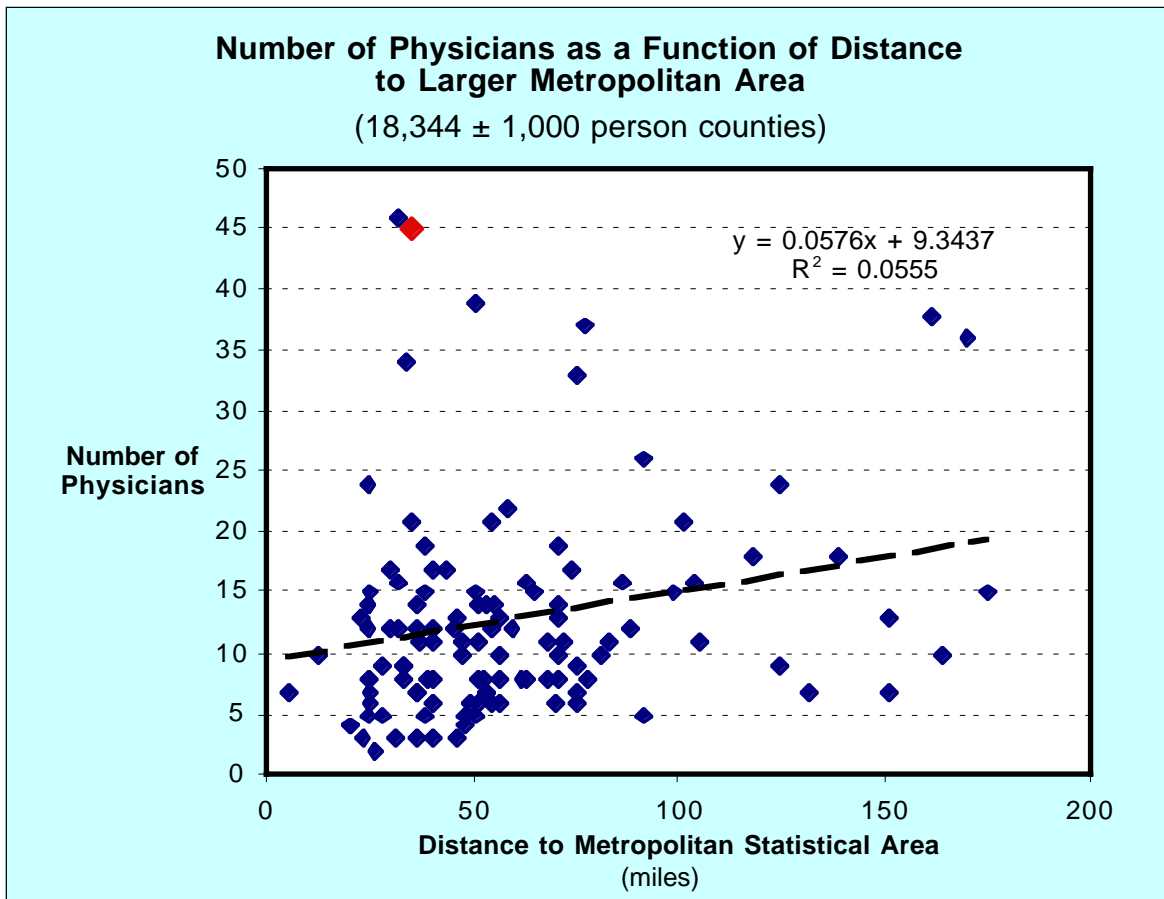
**Distance of Los Alamos-Sized Counties from Large Metropolitan Areas**

The following table identifies the 119 counties that have a population  $\pm 1,000$  of Los Alamos. It also shows the distance to the nearest metropolitan statistical area (MSA). The median distance of these counties from large well-doctoring metropolitan areas is more than 50 miles. Los Alamos is less isolated than communities typically are because it is only 35 miles from Santa Fe.

A subset of 15 western counties was also considered showing Los Alamos in red and the other 14 counties in blue.

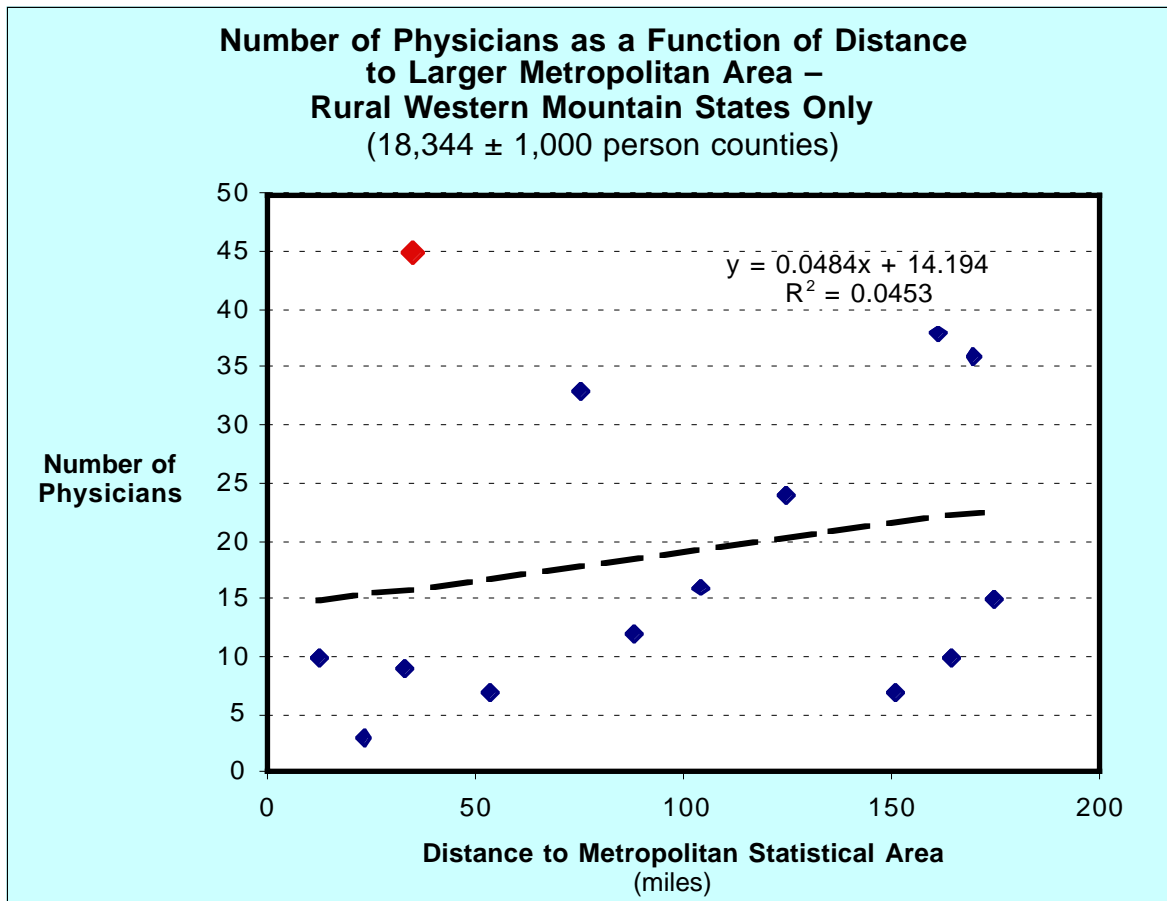
Distance of Los Alamos-Sized Counties from Large Metropolitan Areas						
	County, State	Population Estimate (1998)	Physicians (number)	Nearest MSA	Miles to MSA	MSA Physicians (number)
1	Greene County, NC.....	18,308	2	Greenville	26	673
2	Southampton County, VA.....	17,450	3	Norfolk	46	3,029
3	Jasper County, MS.....	17,672	3	Hattiesburg	31	278
4	Tama County, IA.....	17,739	3	Waterloo	40	225
5	Currituck County, NC.....	17,908	3	Norfolk	36	3,029
6	Jefferson County, ID.....	19,118	3	Idaho Falls	23	152
7	Jefferson County, KS.....	18,243	4	Topeka	20	416
8	Morgan County, TN.....	18,775	4	Knoxville	48	1,731
9	Grant Parish, LA.....	18,990	4	Alexandria	20	289
10	Drew County, AR.....	17,575	5	Pine Bluff	48	158
11	Knott County, KY.....	17,989	5	Huntington	91	518
12	Fountain County, IN.....	18,348	5	Lafayette	38	297
13	Jones County, TX.....	18,669	5	Abilene	24	231
14	Clinton County, MO.....	19,070	5	Kansas City	50	1,912
15	Saunders County, NE.....	19,245	5	Lincoln	28	485
16	Breckinridge County, KY.....	17,465	6	Owensboro	40	159
17	Eastland County, TX.....	17,591	6	Abilene	56	231
18	Washington County, AL.....	17,677	6	Mobile	54	1,192
19	Covington County, MS.....	17,802	6	Hattiesburg	25	278
20	Macon County, TN.....	18,181	6	Nashville	49	3,497
21	Delaware County, IA.....	18,578	6	Waterloo	51	225
22	McIntosh County, OK.....	19,050	6	Tulsa	70	1,358
23	Hampton County, SC.....	19,200	6	Charleston	75	1,761
24	Falls County, TX.....	17,434	7	Waco	25	362
25	White County, GA.....	17,457	7	Atlanta	75	7,926
26	Mercer County, IL.....	17,640	7	Davenport	36	264
27	Kossuth County, IA.....	17,738	7	Des Moines	131	735
28	Butts County, GA.....	17,837	7	Macon	36	737
29	Warren County, NC.....	18,297	7	Raleigh	53	4,366
30	Sevier County, UT.....	18,452	7	Provo	151	387
31	Elbert County, CO.....	18,600	7	Denver	53	5,004
32	Dakota County, NE.....	18,792	7	Sioux City	5	213
33	Ben Hill County, GA.....	17,496	8	Albany	56	217
34	Madison County, FL.....	17,652	8	Tallahassee	40	543
35	Freestone County, TX.....	17,675	8	Waco	62	362
36	Lampasas County, TX.....	17,775	8	Austin	68	2,019
37	Cedar County, IA.....	17,977	8	Iowa City	33	1,129
38	Clarke County, MS.....	18,231	8	Hattiesburg	63	278
39	Rush County, IN.....	18,307	8	Indianapolis	39	4,374
40	Morgan County, MO.....	18,434	8	Columbia	52	896
41	Adams County, WI.....	18,492	8	Madison	78	1,744
42	Fannin County, GA.....	18,622	8	Chatanooga	71	1,068
43	Wakulla County, FL.....	18,652	8	Tallahassee	24	543
44	Madison County, NC.....	18,756	8	Asheville	25	595
45	Tattnall County, GA.....	18,975	8	Savannah	51	655
46	Chickasaw County, MS.....	18,013	9	Tupelo	33	208
47	Colusa County, CA.....	18,572	9	Yuba City	33	187
48	Texas County, OK.....	18,640	9	Amarillo	124	463
49	Clayton County, IA.....	18,722	9	Waterloo	75	225
50	Sullivan County, IN.....	19,270	9	Terre Haute	28	265
51	Perry County, MO.....	17,410	10	St. Louis	71	6,642
52	Jerome County, ID.....	17,962	10	Twin Falls	12	125
53	Scurry County, TX.....	18,073	10	Abilene	81	231
54	Humboldt County, NV.....	18,145	10	Reno	164	728
55	Holmes County, FL.....	18,622	10	Panama City	47	216
56	Gilmer County, GA.....	18,672	10	Chatanooga	56	1,068
57	Gonzales County, TX.....	17,551	11	San Antonio	72	3,407
58	Putnam County, GA.....	17,559	11	Macon	40	737
59	Winn Parish, LA.....	17,714	11	Alexandria	47	289
60	Randolph County, AR.....	17,802	11	Jonesboro	37	226

Distance of Los Alamos-Sized Counties from Large Metropolitan Areas (continued)						
	County, State	Population Estimate (1998)	Physicians (number)	Nearest MSA	Miles to MSA	MSA Physicians (number)
61	Montague County, TX.....	18,539	11	Fort Worth	83	2,130
62	Pottawatomie County, KS.....	18,691	11	Topeka	51	416
63	Warren County, IL.....	18,824	11	Peoria	68	778
64	Wayne County, KY.....	19,107	11	Lexington	105	1,705
65	Jefferson County, GA.....	17,767	12	Augusta	40	1,291
66	Hardin County, IA.....	18,462	12	Waterloo	59	225
67	Washington County, NE.....	18,661	12	Omaha	24	2,078
68	Bibb County, AL.....	18,926	12	Tuscaloosa	32	331
69	Hampshire County, WV.....	19,041	12	Cumberland	30	193
70	Deaf Smith County, TX.....	19,061	12	Amarillo	45	463
71	Franklin County, GA.....	19,080	12	Athens	36	294
72	Klickitat County, WA.....	19,295	12	Portland	88	4,297
73	Taylor County, WI.....	19,313	12	Wausau	54	227
74	Fayette County, AL.....	18,133	13	Tuscaloosa	46	331
75	Waseca County, MN.....	18,178	13	Rochester	56	1,948
76	Attala County, MS.....	18,404	13	Jackson	71	1,397
77	Anderson County, KY.....	18,587	13	Lexington	22	1,705
78	Leelanau County, MI.....	19,142	13	Grand Rapids	151	1,702
79	Bristol city, VA.....	17,486	14	Johnson City	24	1,214
80	Ste. Genevieve County, MO..	17,503	14	St. Louis	51	6,642
81	Jackson County, WI.....	17,735	14	LaCrosse	55	418
82	Patrick County, VA.....	18,441	14	Roanoke	71	737
83	Tishomingo County, MS.....	18,654	14	Florence	36	233
84	Taylor County, FL.....	18,849	14	Tallahassee	53	543
85	Houston County, MN.....	19,267	14	LaCrosse	24	418
86	Lewis County, WV.....	17,427	15	Charleston	99	713
87	Richland County, WI.....	17,891	15	Madison	65	1,744
88	Wetzel County, WV.....	18,256	15	Wheeling	50	346
89	Piscataquis County, ME.....	18,282	15	Bangor	38	311
90	Lincoln County, MT.....	18,696	15	Spokane	175	259
91	Schuyler County, NY.....	19,125	15	Elmira	25	199
92	Harrison County, KY.....	17,565	16	Lexington	32	1,705
93	Young County, TX.....	17,697	16	Fort Worth	86	2,130
94	Roosevelt County, NM.....	18,185	16	Lubbock	104	788
95	Lumpkin County, GA.....	18,981	16	Atlanta	63	7,926
96	Goochland County, VA.....	17,823	17	Richmond	30	2,647
97	Dodge County, GA.....	18,108	17	Macon	40	737
98	Richland County, ND.....	18,272	17	Fargo	43	436
99	Yell County, AR.....	19,110	17	Little Rock	74	1,976
100	Hill County, MT.....	17,373	18	Great Falls	118	186
101	Woodward County, OK.....	18,553	18	Oklahoma City	139	2,436
102	Fluvanna County, VA.....	18,575	19	Charlottesville	38	1,208
103	Colorado County, TX.....	19,021	19	Houston	71	9,199
104	Jackson County, AR.....	17,783	21	Jonesboro	35	226
105	Lavaca County, TX.....	18,813	21	Houston	101	9,199
106	Poweshiek County, IA.....	18,865	21	Iowa City	54	1,129
107	Nobles County, MN.....	19,312	22	Sioux Falls	58	502
108	Logan County, CO.....	17,890	24	Denver	124	5,004
109	Union County, IL.....	17,996	24	St. Louis	24	6,642
110	Clay County, IA.....	17,532	26	Sioux City	91	213
111	Summit County, CO.....	18,749	33	Denver	75	5,004
112	Kent County, MD.....	18,925	34	Dover	34	147
113	Inyo County, CA.....	18,125	36	Bakersfield	170	789
114	Davison County, SD.....	18,006	37	Sioux Falls	77	502
115	Routt County, CO.....	17,514	38	Denver	161	5,004
116	Prince Edward County, VA....	19,028	39	Richmond	50	2,647
117	Los Alamos County, NM.....	18,344	45	Santa Fe	35	308
118	Waynesboro city, VA.....	18,561	46	Charlottesville	32	1,208
119	Montour, PA	17,730	369	Scranton/WB	63	1,196



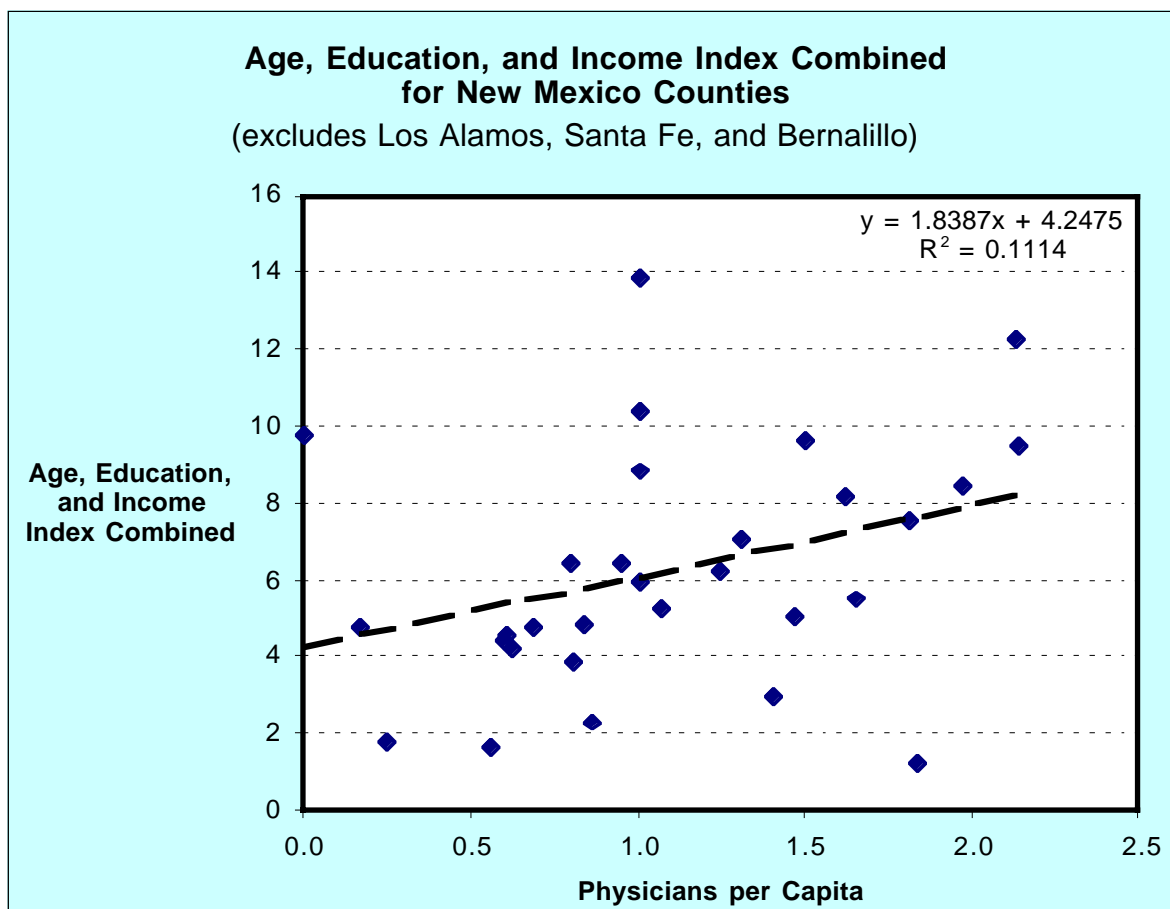
### Number of Physicians as a Function of Distance to Larger Metropolitan Area

The number of physicians in communities the size of Los Alamos is not related to the distance to a metropolitan statistical area. Los Alamos is the red diamond.



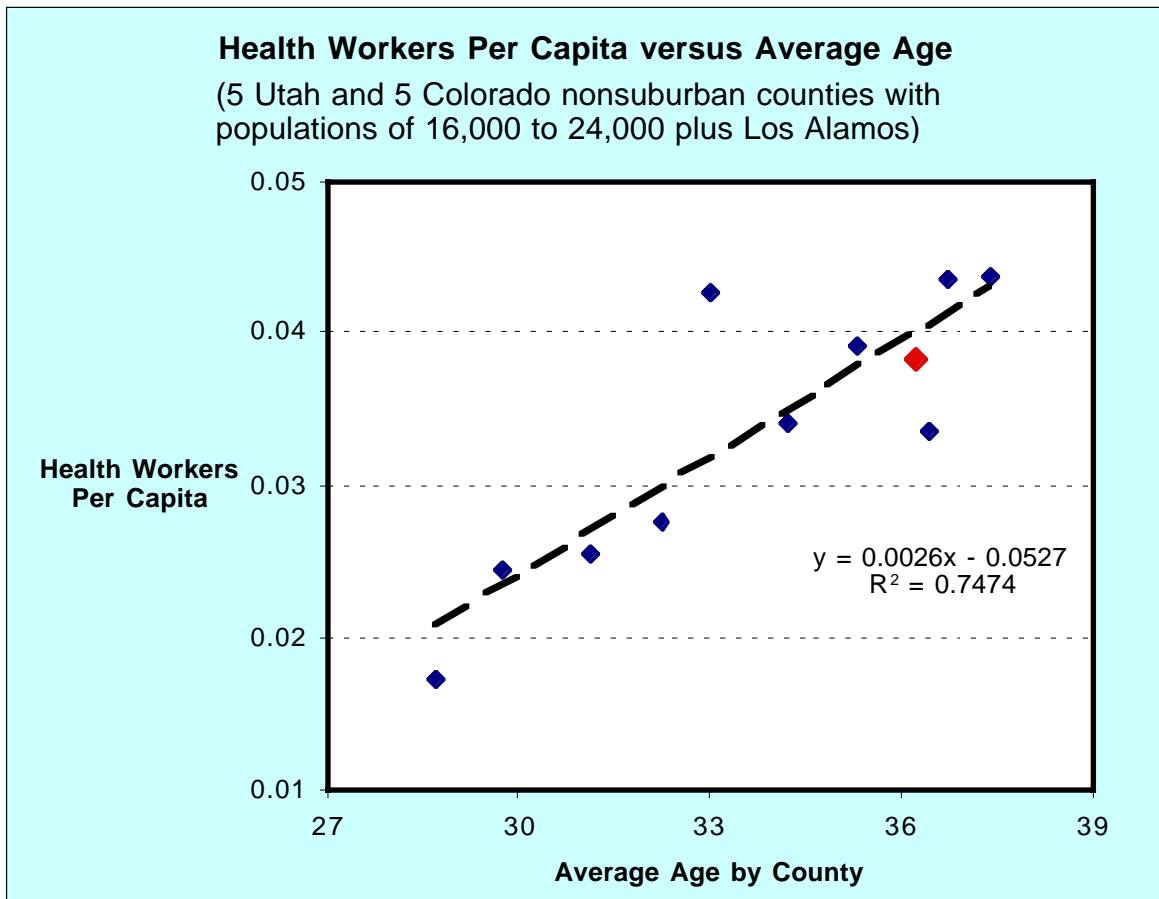
### Number of Physicians as a Function of Distance to Larger Metropolitan Area – Rural Mountain States Only

The number of physicians in communities the size of Los Alamos is not related to the distance to a metropolitan statistical area. In this graph, we plotted results only for the rural mountain states. Los Alamos is the red diamond.



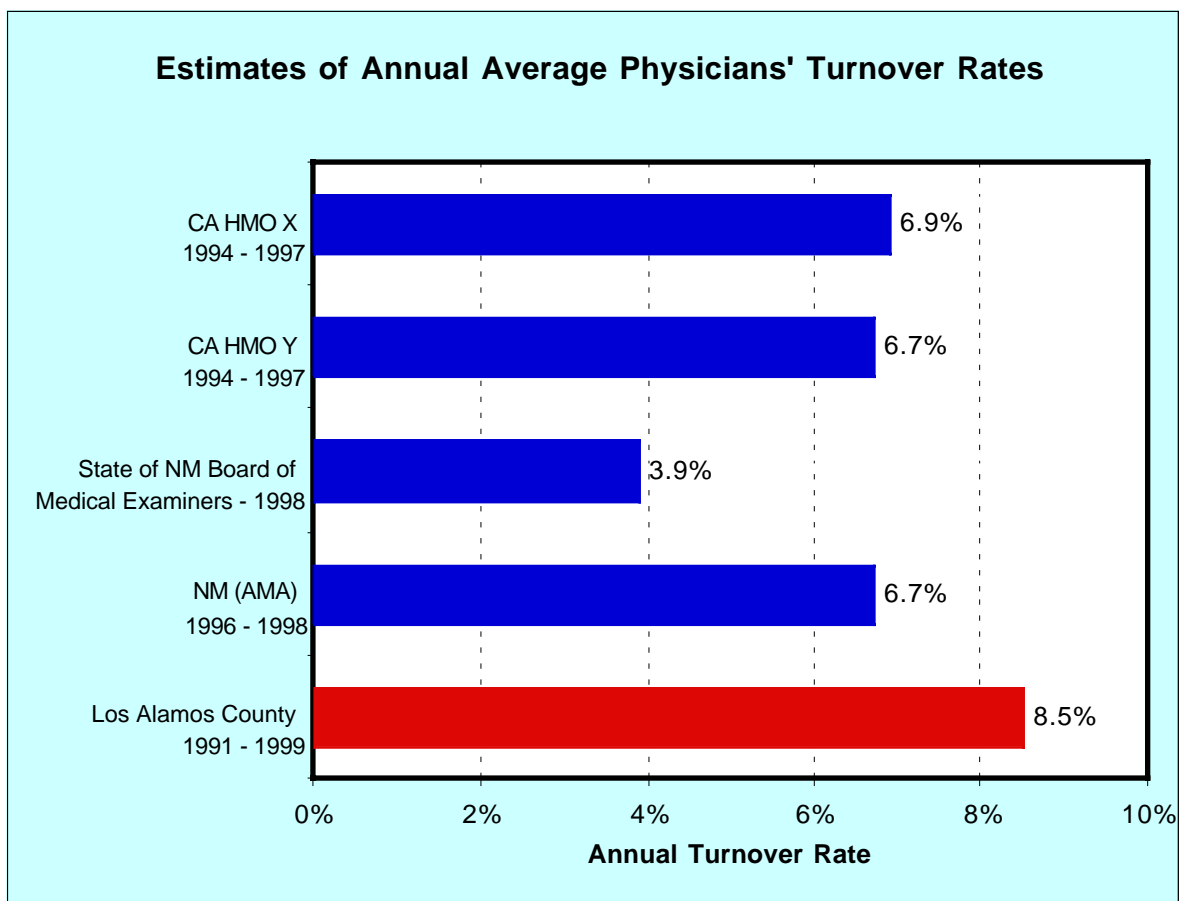
### Age, Education, and Income Index Combined for New Mexico Counties

This graph shows a typical result of many exercises attempting to explain the number of local doctors and other medical services as a function of the relationship amongst age, education, and income. Different analyses used data-bases of 1) specially selected communities chosen for their similarities to Los Alamos' unique age, education, and income characteristics, 2) New Mexico, 3) western U.S. regional communities, and 4) population size similar to Los Alamos. None of these exercises revealed any significant relationships of medical services or usage as a function of education or income. Age often shows up as a significant determinant of medical service usage, but the quantitative relationship is not strong or consistent enough to make reliable predictions at the community or work-group level.



### Health Workers Per Capita versus Average Age

The graph shows the typical relationship of increasing medical services as a function of age. National studies show that this relationship drifts significantly over time as medical services and technologies evolve. Predictions based on the age relationship are difficult to get right and should not be trusted to produce reliable utilization statistics. Los Alamos is the red diamond.



### Estimates of Annual Average Physicians' Turnover Rates

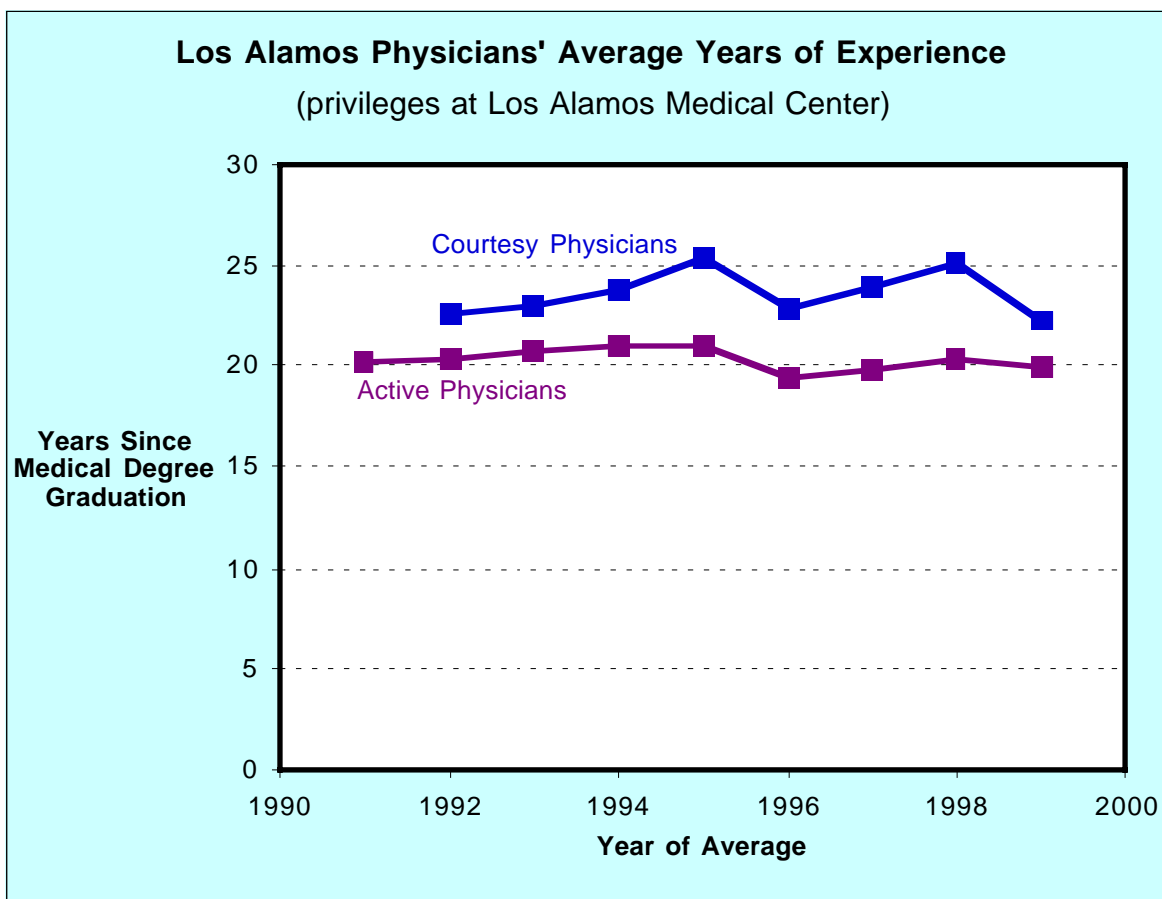
Turnover rates were just under 7% over a 3-year period for two large California HMOs. The annual turnover rate data from the State of New Mexico Board of Medical Examiners shows a fairly low turnover rate of approximately 4%. In addition, the Los Alamos County average active physician turnover rate data is included to make comparisons. While Los Alamos County data shows a slightly higher turnover rate than the California HMOs, the differences are not statistically significant at normally accepted levels of confidence. Given the small sample properties of the Los Alamos data, one cannot draw firm conclusions about the turnover rate among Los Alamos physicians. The Los Alamos turnover rate amounts to about one more doctor per year than the other lower rates shown.





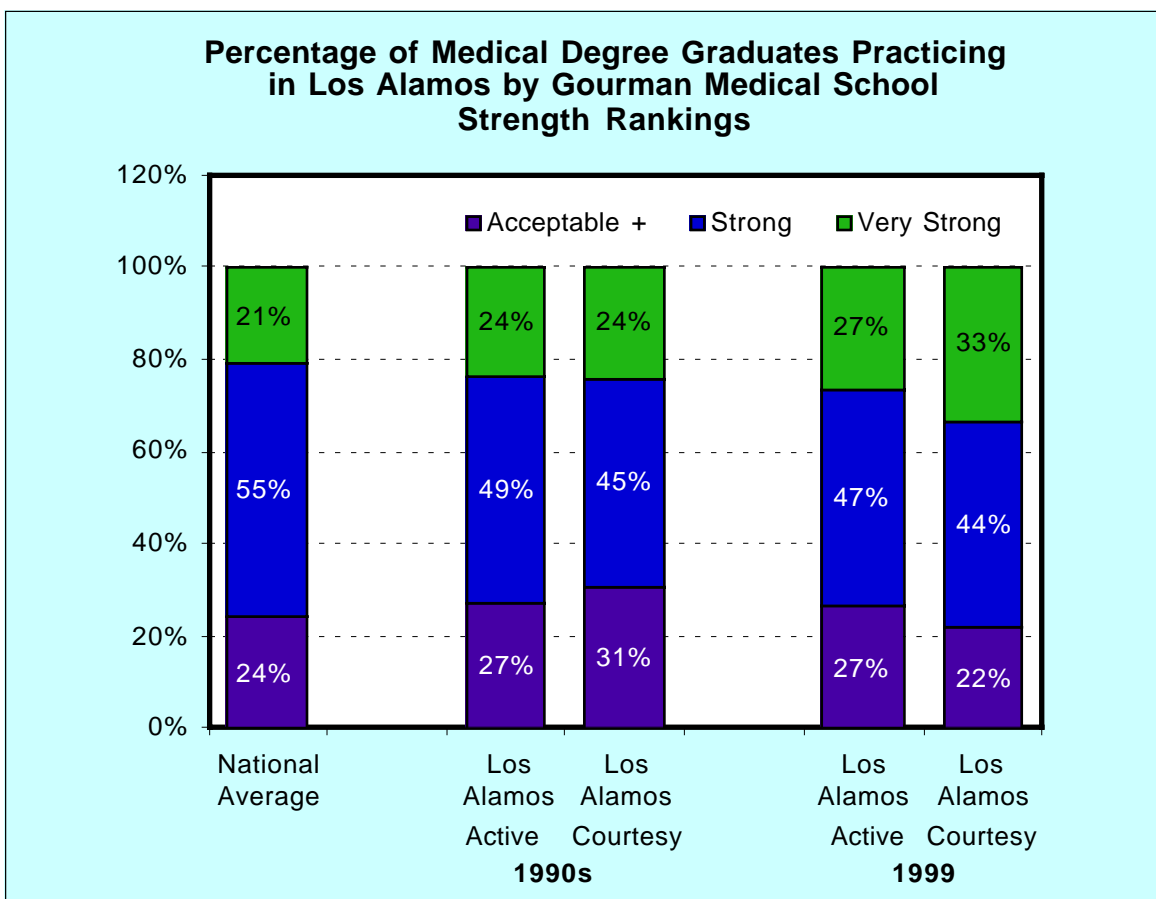
### Collage of Newspaper Articles Regarding Physicians in Los Alamos

Although the local medical community is vocal in expressing the difficulties of recruiting new physicians, the facts do not support the complaints. During the period of March through November 1999, 11 new physicians were recruited into Los Alamos County. This is equal to the median number of total physicians in counties of Los Alamos' size. The extensive normal work and uncertainty of recruiting in general should not be confused with the reality of bringing new doctors to the unique and desirable practice of medicine in Los Alamos.



### Los Alamos Physicians' Average Years of Experience

Other local Los Alamos concerns pertinent to the physician community include the concern that doctors are aging and that when they retire the community will suffer a significant reduction in the accumulated experience of the physician community. This data shows a remarkably stable experience factor for local physicians between both active and courtesy-privileged physicians. Additionally, the age distribution of Los Alamos physicians very closely mirrors the U.S. age distribution of physicians. Los Alamos is very normal in this respect.



**Percentage of Medical Degree Graduates Practicing in Los Alamos by Gourman Medical School Strength Rankings**

While rankings of medical schools may be quite subjective, the available data show that Los Alamos physicians have a higher percentage representation in graduation from medical schools ranked very strong as compared to the national average. Data for the decade of the 1990s shows a higher representation in very strong medical schools and is getting better. This trend is positive for the local patient populace.

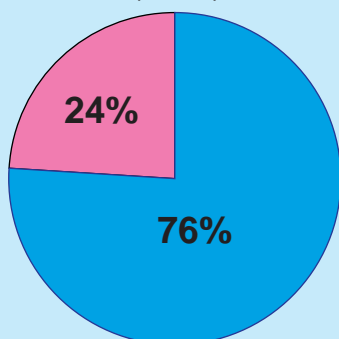
## Physicians

### **Physician Gender**

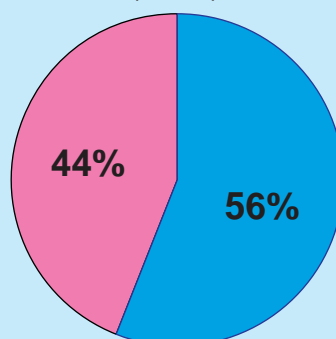
Los Alamos has an unusually high percentage of female physicians and the percentage has been getting higher. Anecdotal direct evidence from physicians indicates that this is partially explained by female physician spouses paired with male spouses at the heavily male-staffed Los Alamos National Laboratory.

## Physician Gender

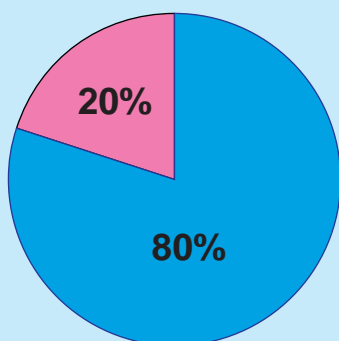
**National Average**  
(1999)



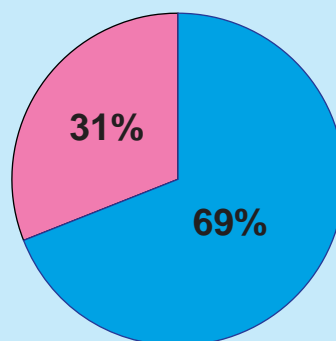
**All Los Alamos Active Physicians**  
(1999)



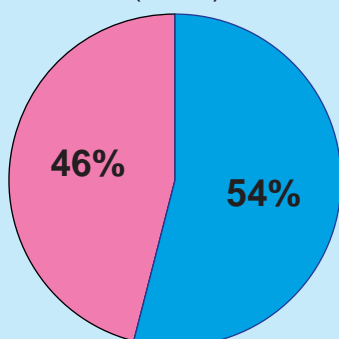
**National Average**  
(1991 to 1999)



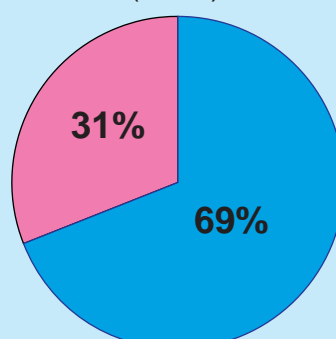
**All Los Alamos Active Physicians**  
(1991 to 1999)



**All USA Employees National Average**  
(1999)



**All Los Alamos National Laboratory Employees**  
(1999)



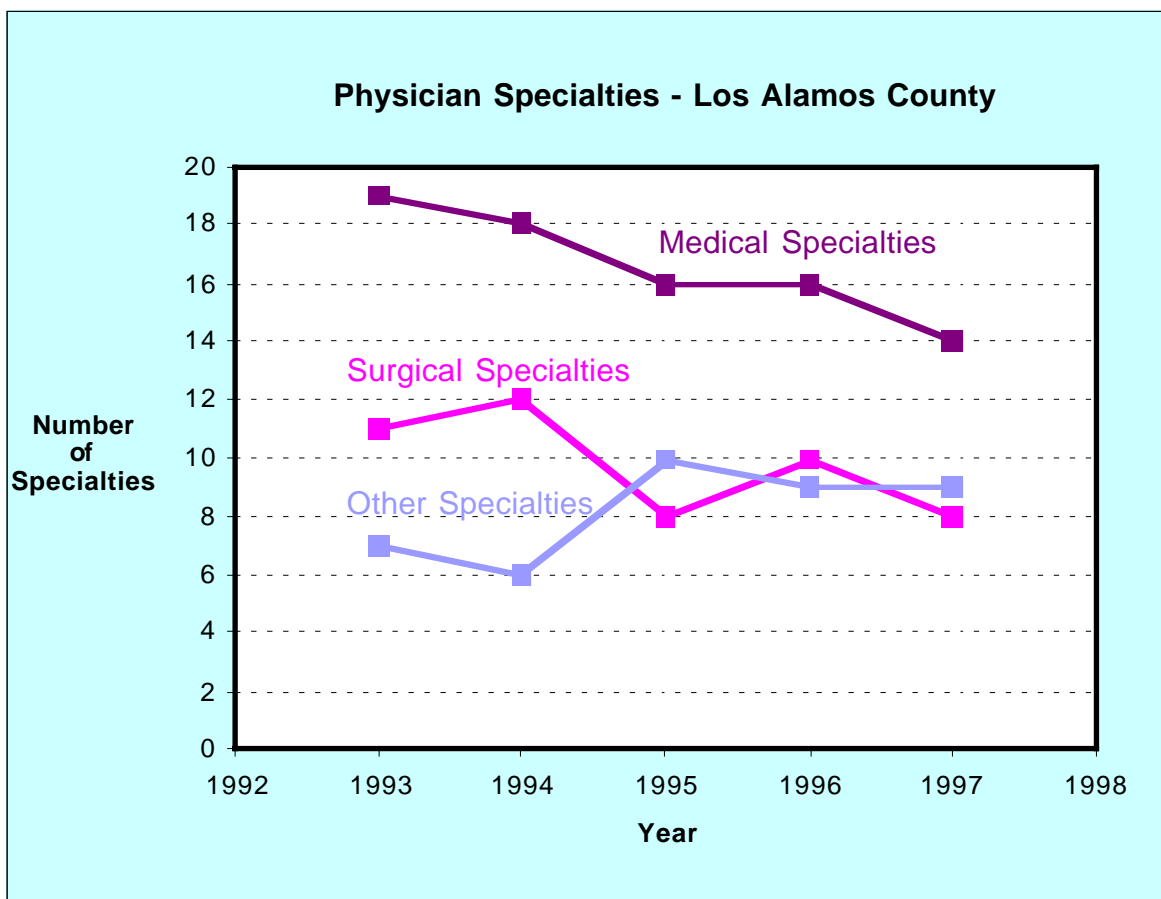
Female  
Male

## Physicians

Number of Physicians by Specialty							
	Active				Courtesy		
Specialty	1991	1995	1999		1991	1995	1999
Pediatrics	6	6	4		0	1	2
Family Practice	3	7	6		1	2	5
Surgery	8	5	2		1	3	5
Internal Medicine	8	9	14		2	3	8
Obstetrics and Gynecology	3	4	3		0	0	0
Radiology	1	1	1		0	0	1
Anesthesiology	1	4	2		0	0	0
Pathology	2	1	0		0	0	0
Psychiatry	3	3	0		0	0	0
Podiatry	0	1	1		0	0	1
Other Specialty	4	5	4		3	5	2
<b>Total</b>	<b>39</b>	<b>46</b>	<b>37</b>		<b>7</b>	<b>14</b>	<b>24</b>
Note: Surgery includes Orthopedic, Ophthalmology, and Urology. Internal Medicine includes Allergy, Cardiology, Gastroenterology, Rheumatology, Oncology, and Ear, Nose & Throat. Other includes Emergency Room, Dermatology, and Neurology.							

### Number of Physicians by Specialty

Physician specialties among Los Alamos physicians display significant coverage for a small town. This graph is based upon data from the physician privileges database. The following graph is based upon the American Medical Association's master physician file and shows similar results. The numbers of specific specialties fluctuate over time. Occasionally particular specialties are greatly reduced or lost, but this has to be expected in such a small market. Towns of our size would normally have nothing like the specialist availability that Los Alamos typically enjoys.



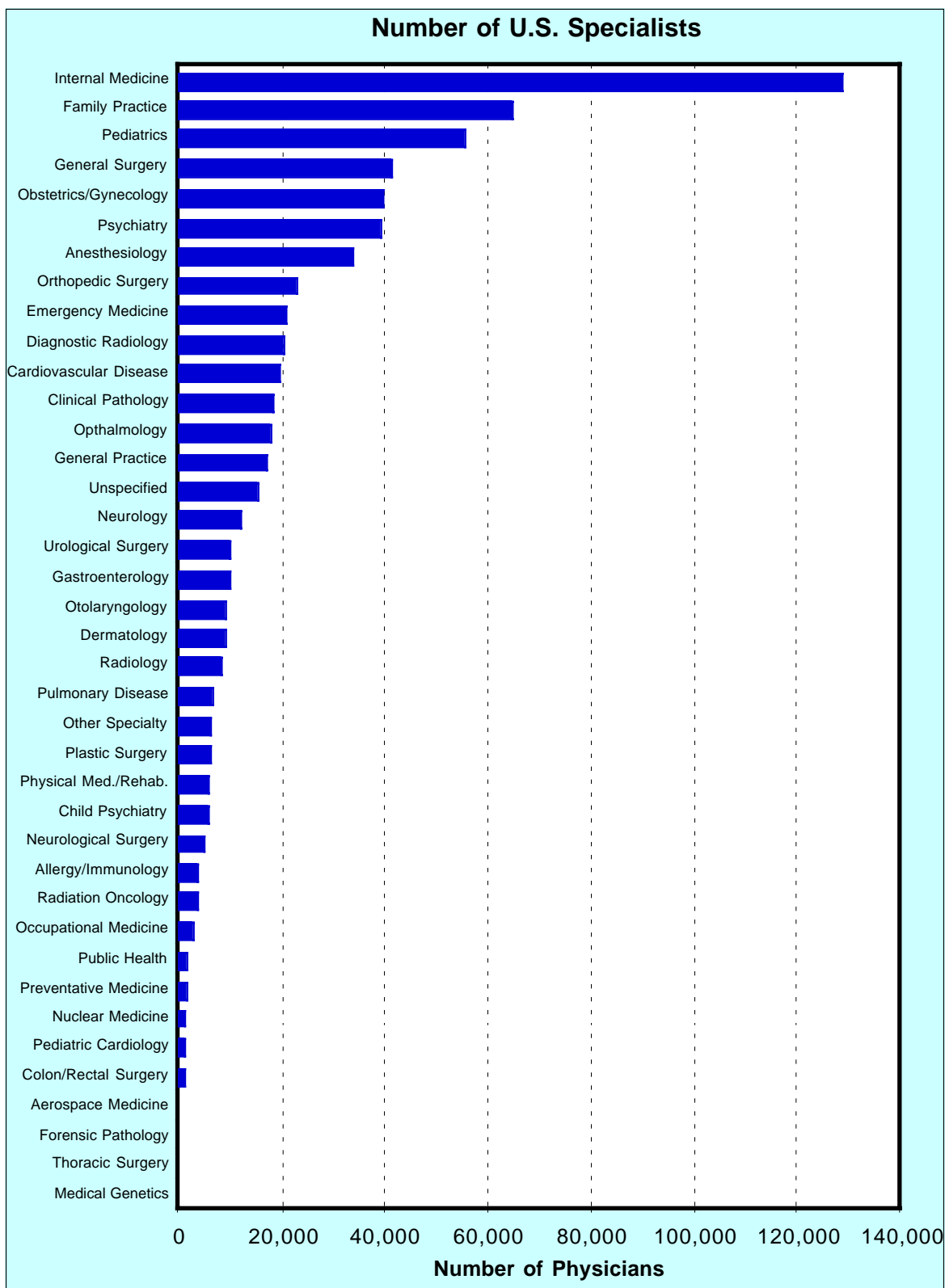
### Physician Specialties – Los Alamos County

The AMA's master physician's file for Los Alamos County specialists is consistent in showing small town fluctuations just as the physician privileges database. Los Alamos is well supplied with more specialists than usual in a small town. This graph shows only physicians with active privileges. The number of courtesy physician specialists is rising.

### **Number of U.S. Specialists**

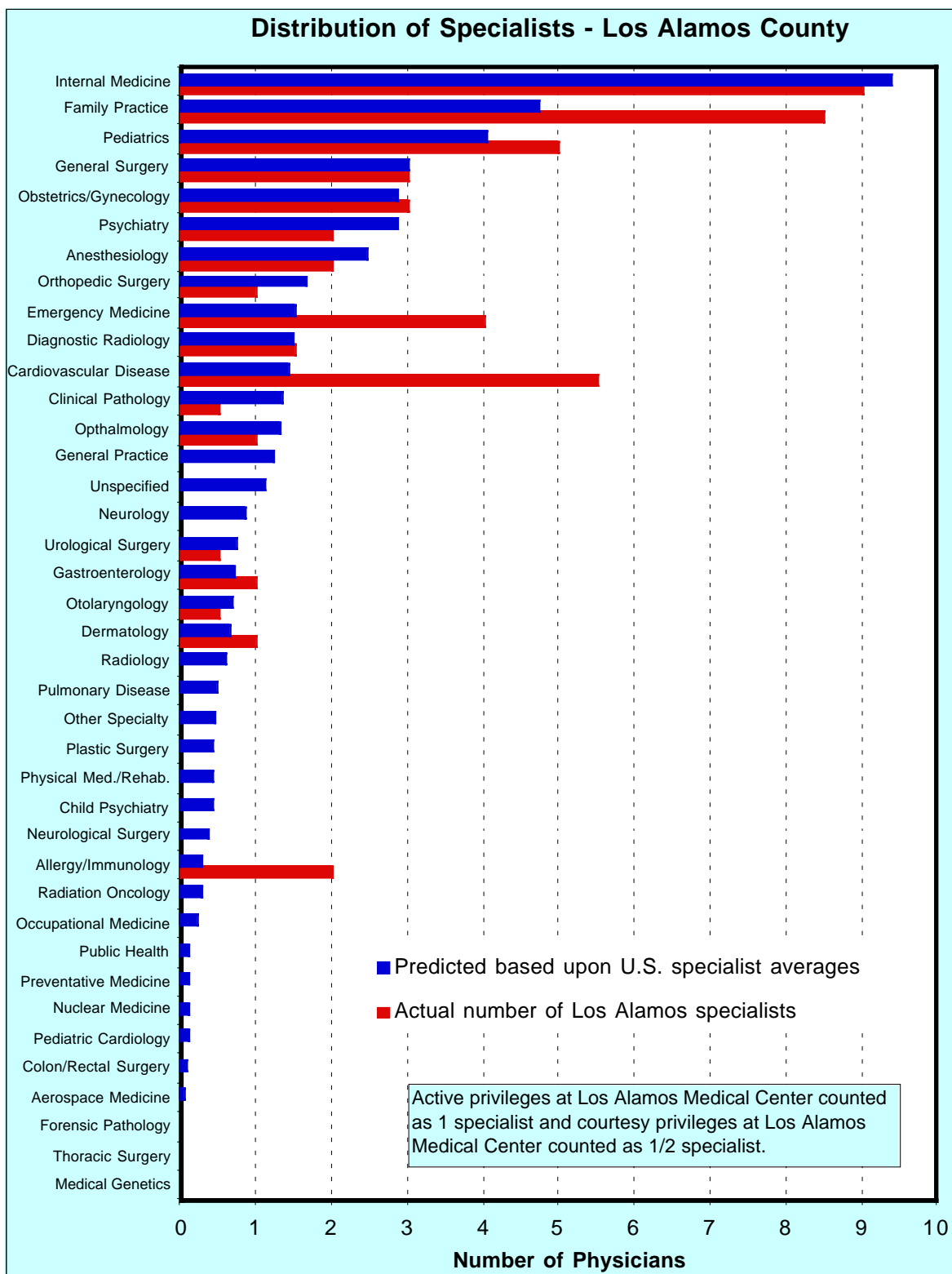
In some general theoretical context, the range of specialties represented by a population of physicians should be based on the need for that specialty as determined by the disease rate of the population to be attended by these physicians. Thus, rates of disease caused by common, but minor maladies are relatively high per unit of population and result in numerous general practitioners and internal medicine physicians. By ranking the number of specialist physicians from most to least, the bar graph on the following page shows that there are large numbers of internal medicine specialists and family practitioners. We used this national distribution to estimate what should be expected in Los Alamos County.





### **Distribution of Specialists – Los Alamos County**

Using the specialist data from several earlier charts we derived a relationship of the specialist mix we would expect to find in Los Alamos County. The blue bars are the percentage of U.S. specialists times the number of actual doctors in Los Alamos County (the predicted number of Los Alamos doctors for each specialty). The actual Los Alamos specialists are shown by the red bars (active privileges counts as one, courtesy counts as one half). Actual family practice physicians are more numerous than the prediction. Emergency room physicians appear to be very numerous because many standby doctors provided by the EmCare contract are given privileges. Cardiovascular specialists are very numerous because of courtesy privileges extended to many Santa Fe cardiologists. No other specialties are significantly different than the national averages would have predicted. Los Alamos distribution of specialists is very close to what would be expected using national ratios. Many specialties are not represented in the county because the 18,344 population base would support less than one such doctor. This is as expected. There appears to be no systemic problem with the availability of local Los Alamos specialists.





# How Doctors Get Paid

## Under Managed Care

### **How Doctors Get Paid**

A large percentage of the physicians' practice in Los Alamos involves patients whose medical expenses are covered under various managed care plans. The method of calculating payments of such plans is important to a physician's practice revenue.

# Word Confusion

- Income
- Practice Revenue
- Receipts
- Net Income
- Salary
- Wages
- Pay
- Net Income Before Taxes
- Net Income After Taxes
- Compensation
- Billings
- Deferred Compensation
- Net Income Before Taxes After Expenses
- Net Income Before Taxes Before Expenses
- Gross Income
- Take Home Pay

## Word Confusion

When speaking of income for any business it is easy to introduce confusion about what income means. This is especially the case with physicians whose business organization can include sole proprietorships, partnerships, and professional corporations. Complications of the tax law introduce another level of complexity into the discussion of income. Then add to this the confidential nature of one's income and the discussion of any attendant analysis can become very murky.

# Definitions

- CPT Code – Current Procedure Terminology – AMA assigns 5-digit code for all procedures performed by doctors
- RBRVS – Resource Based Relative Value Scale – HCFA-defined relative value unit based on time, resources, technical skill, and overhead consumed in providing service or performing procedure
- CF – Conversion Factor – a dollar value converting the relative value units into a reimbursement rate

## Definitions

Current procedure terminology (CPT) codes exist for all procedures that a physician can perform. There are approximately 6,000 such procedures and associated CPT codes. Each CPT code also carries with it a resource based relative value scale (RBRVS) that is an index of cost and difficulty/skill required to perform the procedure. Conversion factors (CF) are the dollar amounts that are the essential element of contracts negotiated between third party administrators and physician providers.

# Examples

- 99213 – Office or other outpatient visit for the evaluation or management of an established patient requiring at least two of these three components: (1) an expanded problem-focused history, (2) an expanded problem-focused examination, or (3) a medical decision making of low complexity (0.96 relative value units)
- 42835 - Adenoidectomy, primary, under age 12 (4.18 relative value units)

## Examples

Here are two examples of current procedure terminologies and their associated relative value units (RVU).

## Reimbursement Formula

- $99213 - 0.96 \text{ RVU} \times \$55.00 \text{ CF} = \$52.80$
- $42835 - 4.18 \text{ RVU} \times \$55.00 \text{ CF} = \$229.90$

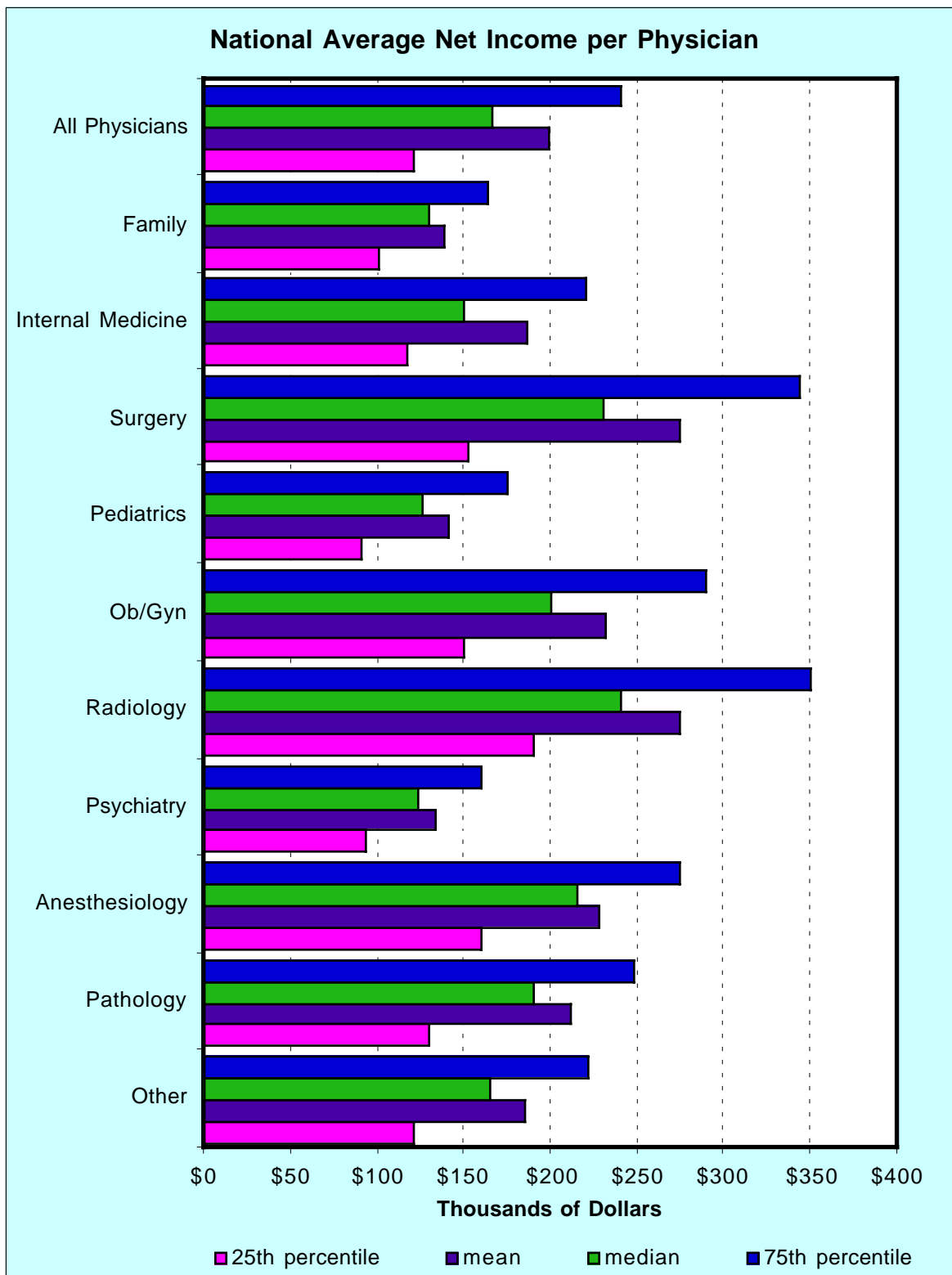
### Reimbursement Formula

The formula shows the application of the conversion factor to the relative value unit to obtain the dollar sum that would be the reimbursement for the physician performing these procedures.



**National Average Net Income per Physician**

This chart illustrates the significant dispersion in physicians' net incomes both within specialties and across specialties. A chart arraying the dispersion of physicians' net incomes by geographic region would show similar dispersion. This data is included to bring home the point that we should expect to see wide dispersion in physicians' incomes in our own community. This dispersion is created by a wide variety of factors including medical market factors and personal characteristics.



**Los Alamos versus American Medical Association National Salary Data**

A survey was conducted during 1999 of physicians' salaries and practice revenue in Los Alamos County. This survey was conducted privately and specific salary and revenue information is not to be released to the public. About one half of the physicians participated. The survey design had a number of definitional problems and potential sampling errors. Nonetheless, the results indicated a range of salaries that were very wide but fairly consistent with national ranges. The same can be said for practice revenue. This limited survey revealed no statistically significant difference between the Los Alamos and national numbers.

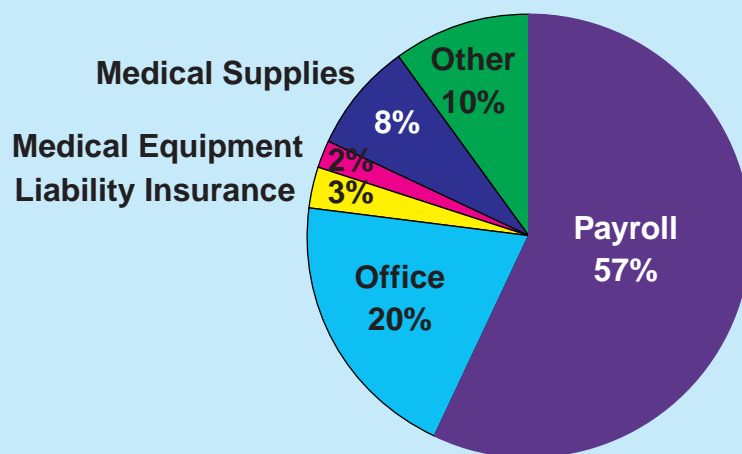
### **Average Family Practice and Specialty Expenses Nationwide**

The American Medical Association publishes data on practice expenses of physicians. Based on this information one can identify important categories of practice expenses of a large sample of doctors. In the Family Practice pie chart the payroll expenses account for almost 60% of a doctor's total office expenses. Together with office expenses at 20%, these two categories of expense account for almost 80% of practice expense. Office expenses are predominated by office rent, and utilities are also included in this category. Medical equipment and supply expenses together account for about 10% of a physician's practice expenses. These items are purchased in national markets and there would be no reason why such items would be more expensive to physicians in Los Alamos than anywhere else. Professional liability insurance is based on statewide factors and is identical for physicians in the same specialty categories. The Specialty pie chart contains the same information and the data indicate similarity in percentages of business expense by category.

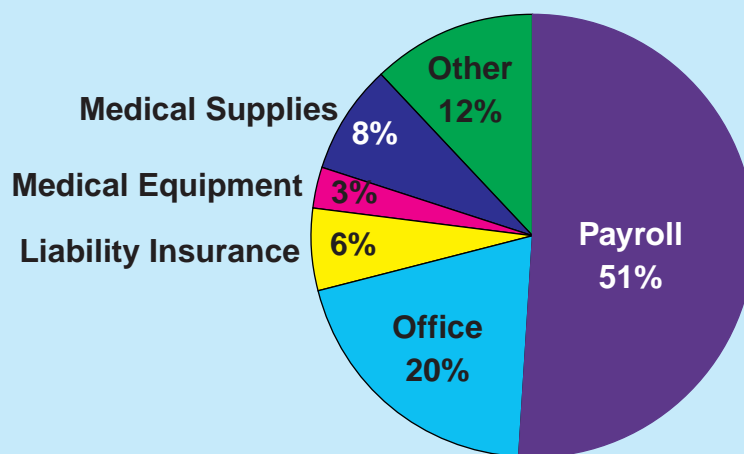
It is frequently stated that Los Alamos is an expensive town in which to do business, including a medical business. In order to test the truth of this statement with respect to a medical practice business, we gathered comparative data between Los Alamos and other communities for medical salaries, wages, office rent, and utilities as shown in the following exhibits. The result is that Los Alamos practice costs are similar to or lower than those elsewhere in New Mexico. Local practice costs are significantly less than national averages. These results refute the local doctors' arguments that they need higher reimbursement rates based upon local practice expenses.

## Average Family Practice and Specialty Expenses Nationwide

### Family Practice



### Specialty



<b>Medical Personnel Average Wages</b> (dollars per hour)			
<b>Employment Category</b>	<b>Albuquerque MSA*</b>	<b>Santa Fe MSA*</b>	<b>National**</b>
Registered Nurses	\$19.55	\$20.74	\$20.71
Licensed Practical Nurses	\$13.16	\$13.97	\$13.48
Medical Secretary	\$9.52	\$10.30	\$11.26
Medical Records Technician	\$9.42	\$10.21	\$10.57
<b>Wage Bill</b>	<b>\$51.65</b>	<b>\$55.22</b>	<b>\$56.02</b>
Sources: * New Mexico Department of Labor Occupational Wage Survey, 1997, 1998, 2000. ** Bureau of Labor Statistics, Occupational Wage Estimates, 1998.			

### Medical Personnel Average Wages

A comparison of medical personnel wages between the two largest metropolitan statistical areas in the state shows that Santa Fe averages are marginally higher than Albuquerque, but lower than the country. For statistical purposes, Los Alamos is included within the Santa Fe MSA. Confidential data not reportable here indicate that the average wage bill for Los Alamos medical personnel is somewhat below Santa Fe and slightly above Albuquerque.

### Commercial Office Lease Rates

To examine the relative cost of leased office space in Los Alamos, Albuquerque, and Santa Fe, data has been collected for the office space markets in the three localities. The source of the data for Albuquerque and Santa Fe are publications of the commercial real estate brokers for the relevant markets. Data for Los Alamos was obtained directly from personal conversations with property owners.

Most of the leases in Albuquerque and Santa Fe are quoted in terms of full service (FS) leases, in which the landlord provides maintenance and janitorial service. To put a net net net (NNN) lease on FS terms requires adding approximately \$2.00 per square foot. Thus, Los Alamos rates for the two properties included would be in the neighborhood of \$14.00 to \$16.00 per square foot. This is in the range of Albuquerque properties shown and at the lower end of the lease rates for Santa Fe. Based on this data, Los Alamos lease rates are no higher than Albuquerque and appear to be lower than is general for Santa Fe. Furthermore, anecdotal evidence indicates that physicians who office in the Los Alamos Medical Center, particularly those who have occupied the same space for quite some time, pay rents significantly lower than the commercial rates shown for Los Alamos. There is strong evidence suggesting that office expenses are considerably lower for Los Alamos physicians than their Albuquerque and Santa Fe colleagues.

### Commercial Office Lease Rates

Los Alamos	Location	Class	Square Footage	Lease Rate	Lease Terms
130 Central Park Square	center of downtown	A	various	\$14.00	NNN
3500 Trinity Drive	between Los Alamos Medical Center and downtown	B	various	\$12.00	NNN
Los Alamos Medical Center	3917 West Road	A	various	\$5.00 to \$12.00	NNN

Albuquerque	Location	Class	Square Footage	Lease Rate	Lease Terms
4600 Jefferson, NE	north valley/adjacent to St. Joseph's	A	8,500	\$16.50	MG
4101 Indian School Road, NE	northeast heights	A	various	\$16.50	FS
715 Martin L. King, Jr.	St. Joseph's square/downtown	A	7,617	\$16.00	FS
6000 Uptown, NE	uptown area (near malls)	A	< 8,200	\$15.50	FS
1128 Pennsylvania Avenue, NE	uptown area (near malls)	A	1,898	\$15.50	FS
2301 Buena Vista, SE	southeast heights	A-	< 5,000	\$15.00	FS
1400 Central Avenue, SE	southeast heights	A	< 9,700	\$14.50	FS
7500 Montgomery, NE	northeast heights	A-	3,440	\$14.50	MG
4001 Indian School Road, NE	northeast heights	A	various	\$14.50	FS
1717 Louisiana Boulevard, NE	uptown area (near malls)	A	< 3,100	\$13.50	FS
10820 Comanche, NE	northeast heights	B	various	\$12.00	FS

Santa Fe	Location	Class	Square Footage	Lease Rate	Lease Terms
465 St. Michaels Drive	between hospital and I-25	A-	3,080	\$22.00	FS
2207 Miguel Chavez	near hospital/southeast Santa Fe	A	6,000	\$18.00	FS
2207 Miguel Chavez	near hospital/southeast Santa Fe	A	1,350	\$18.00	FS
550 St. Michaels Drive	near hospital/southeast Santa Fe	A-	788	\$16.00	FS
141 Paseo de Peralta	near downtown	B	1,260	\$12.00	FS

FS: full service, landlord pays all costs.

MG: modified gross, part of lease rate is determined as a percentage of gross sales.

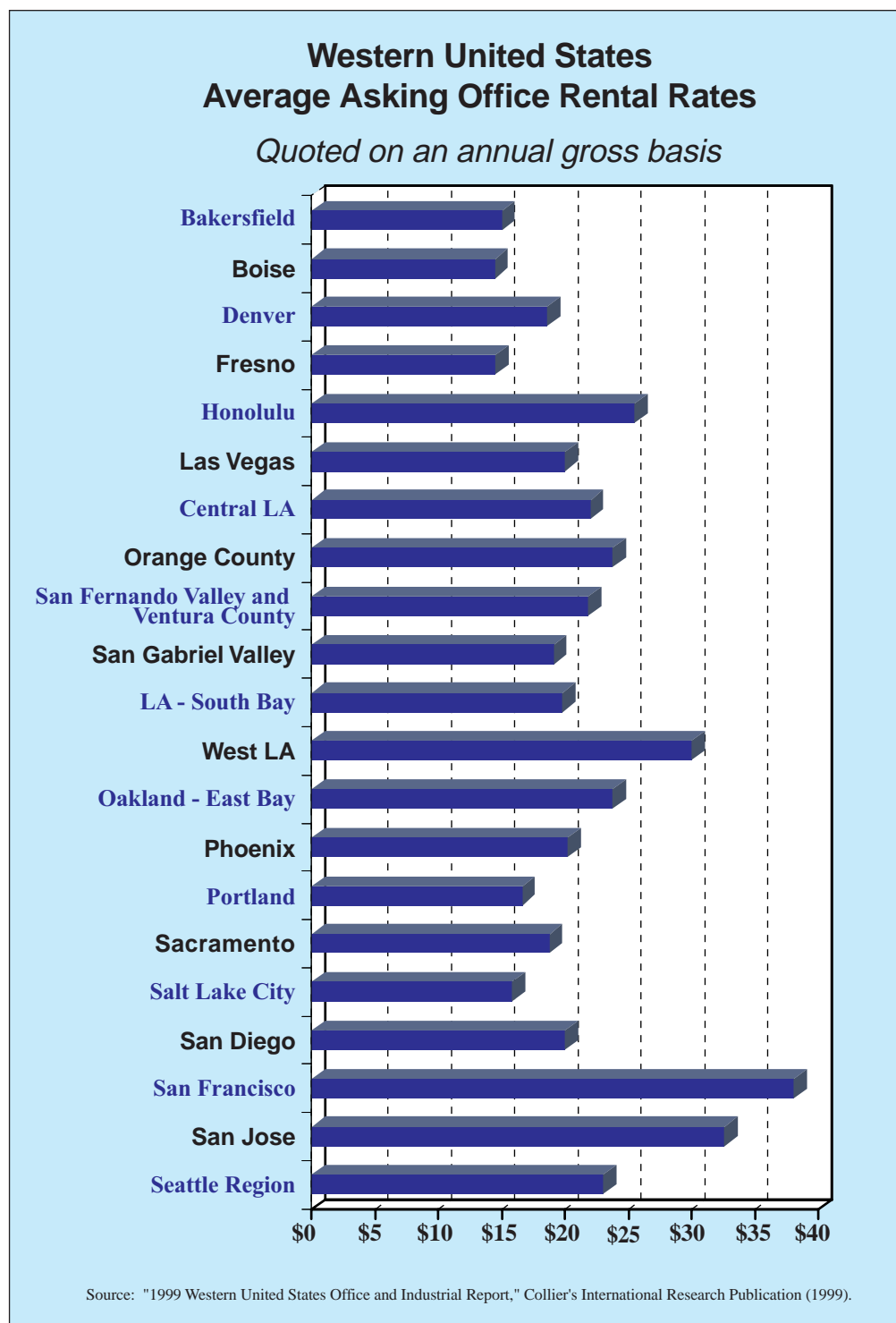
NNN: net net net, lessee pays all costs.





### **Aspen Medical Care**

Aspen Medical Care's five physicians recently moved to a downtown Los Alamos location instead of the almost universal practice of residing at LAMC. Downtown Los Alamos rents are less than in Santa Fe.



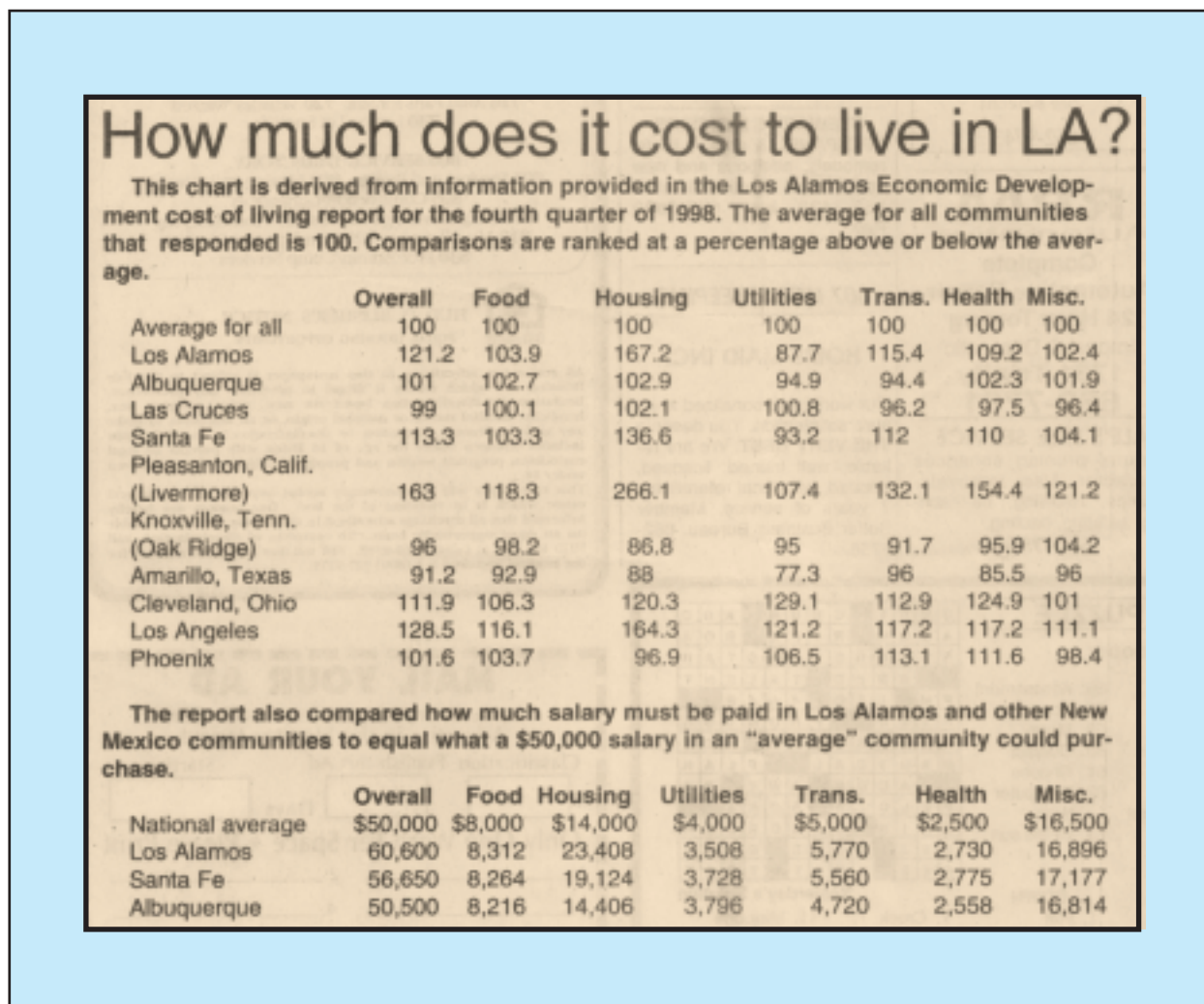
### Western United States Average Asking Office Rental Rates

For purposes of regional comparison, this chart shows the average asking lease rental rates for major markets throughout the Rocky Mountain West and West Coast areas. Based on this comparison data, the \$15 lease rates in Los Alamos are quite a bargain.

Comparative Utility Rates			
	Los Alamos	Albuquerque	Santa Fe
Electric (dollars per kilowatt-hour)	\$0.08	\$0.10	\$0.08
Gas (dollars per therm)	\$0.36	\$0.37	\$0.44
Water (dollars per thousand gallons)	\$3.72	\$1.18	\$2.81

### Comparative Utility Rates

The other major portion of office expense is utilities. While utilities do not comprise a large portion of this expense category, the data show that electricity and gas rates are cheaper in Los Alamos than Albuquerque and Santa Fe. While the price of water is considerably higher in Los Alamos per thousand gallons, most physicians' offices would not consume large quantities of water. Accordingly, water would not comprise a large expense item.



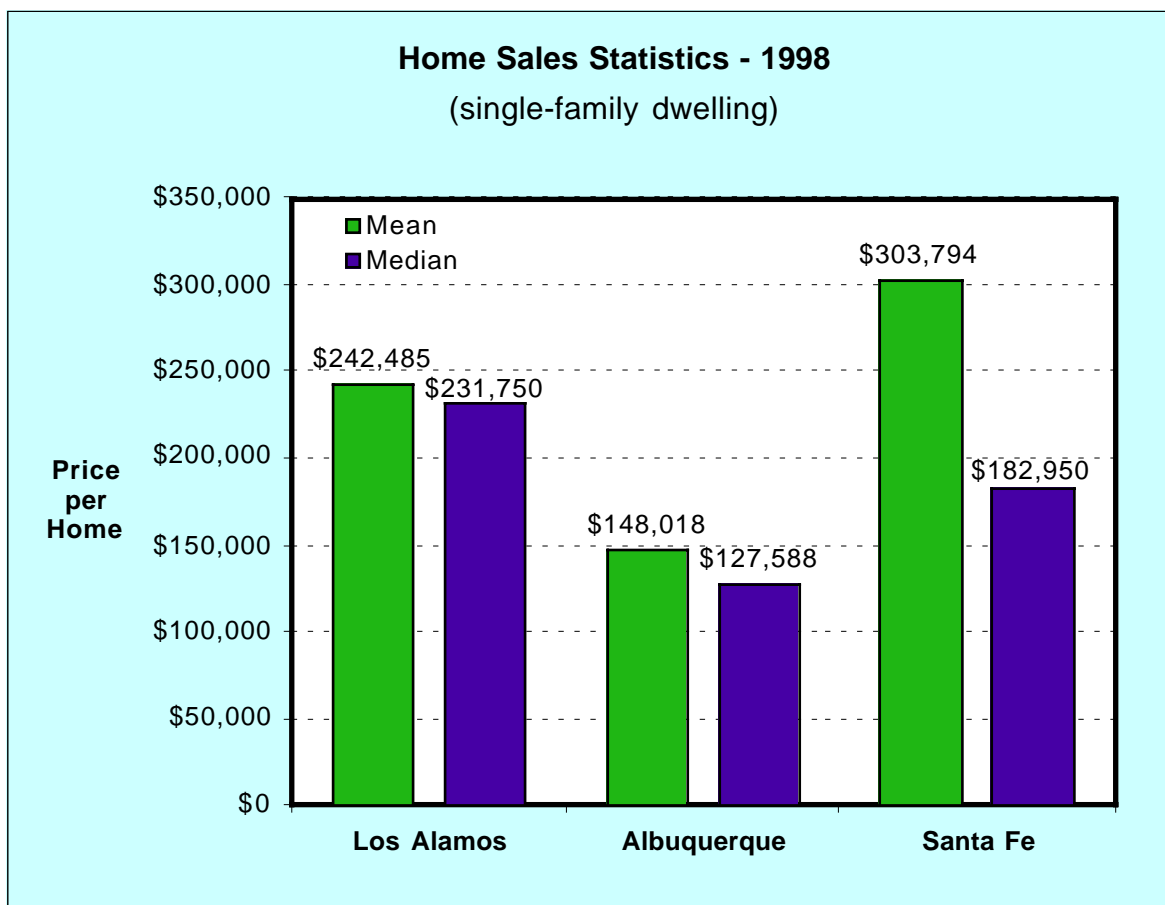
### Newspaper Article, "How Much Does It Cost to Live in Los Alamos?"

The cost of living in Los Alamos is widely discussed and debated as one of the negatives of living in Los Alamos. It is widely attributed to be one of the factors behind the alleged difficulty of recruiting and retaining physicians. In earlier charts and discussion this recruitment has been addressed and shown to be a nonissue. However, the cost of living in Los Alamos remains to be addressed. This newspaper article is based on American Chamber of Commerce data and compares the cost of living for Los Alamos and other cities in New Mexico and beyond. The list includes comparison cities and towns containing other Department of Energy facilities. Los Alamos ranks among the highest cost cities in the list. Quick perusal of the table indicates quite clearly why Los Alamos is ranked among the highest cost cities—the cost of housing is the major explanatory factor. Food is approximately the same as Albuquerque and utilities are lower as shown earlier. The transportation cost index is higher probably due to slightly higher gasoline prices locally and also that consumer activities often involve a trip to Santa Fe or Albuquerque. The higher "health" costs refer to the prices patients pay, and should not be confused with doctors' practice expenses which are in fact, lower than normal.

<b>Average Prices for Selected Typical Consumer Items (late 1999)</b>			
<b>Consumption Category</b>	<b>Los Alamos</b>	<b>Albuquerque</b>	<b>Santa Fe</b>
Median Housing Price	\$265,225	\$140,875	\$214,133
Mortgage Payment (P & I)	\$1,313	\$687	\$1,044
Apartment Rent	\$745	\$741	\$732
Hospital Room	\$400	\$371	\$260
Doctor	\$54	\$51	\$56
Dentist	\$85	\$74	\$91
Total Energy	\$85	\$92	\$80
Phone	\$21	\$24	\$21
Tire Balance	\$9	\$8	\$8
Beauty Salon	\$26	\$26	\$26
Dry Cleaning	\$7	\$9	\$7
Man's Shirt	\$21	\$28	\$29
Grocery Basket	\$71	\$70	\$70

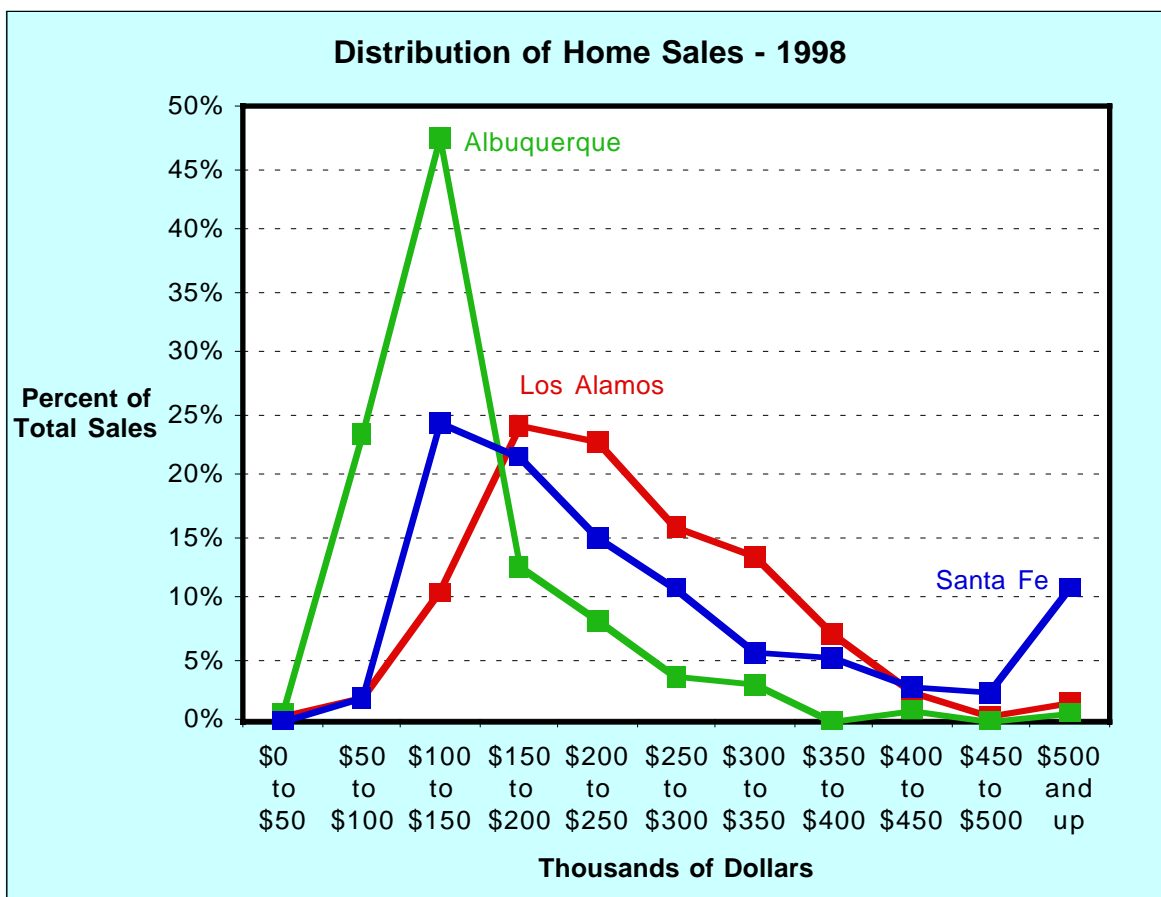
### **Average Prices for Selected Typical Consumer Items**

This chart breaks down the relative cost of common consumer purchases in Los Alamos, Albuquerque, and Santa Fe, including various forms of housing. One can readily see that the median home price in Los Alamos is significantly higher than in Albuquerque and Santa Fe. The associated principal and interest (P&I) cost of a mortgage on such a home is correspondingly higher than in either of the other comparison cities. Interestingly, apartment rentals are almost identical in the three locations. Other items can be compared to reach the conclusion that, except for housing, prices in Los Alamos for common consumer items are not consistently higher than Albuquerque or Santa Fe.



### Home Sales Statistics – 1998

Because housing is the major driver of the differential cost of living in Los Alamos, it merits closer examination and an attempt to determine why this might be the case. This chart contains the mean and median home prices in three comparison areas, Los Alamos, Albuquerque, and Santa Fe. Data for this chart were obtained from residential real estate information sources for 1998 in the three communities. Differences in means or medians among various sources are due to differences in the time period of data collection and the natural variation in prices that would be observed in the market over time. Note that in all three communities the means are higher than the medians. This suggests something about the distribution of house prices—that the aggregate value of the homes with selling prices above the median exceeds the aggregate value of homes with selling prices below the median. In other words, the selling price distribution is skewed. Note further that the differences between the means and medians in each of the three locations are quite different. Santa Fe's selling price distribution must be quite skewed.



### Distribution of Home Sales – 1998

The data behind this chart are used to display the home selling price distributions for 1998 for the three locations—Los Alamos, Albuquerque, and Santa Fe. These distributions are quite revealing about housing market conditions in the three areas. Note that Albuquerque’s distribution peaks in the \$100,000 to \$150,000 range and that 75% of the sales are at or below that range. Compare the median Albuquerque home price at \$127,588. Examine the precipitous drop in the Albuquerque curve as it connects the next higher point in the distribution—the \$150,000 to \$200,000 price bracket. In contrast, the peak of the Los Alamos distribution occurs one price bracket above the Albuquerque distribution. Again, compare the median Los Alamos home price of \$231,750. See how the Los Alamos distribution is far less peaked than that for Albuquerque and lies mostly to the right—the upper end—and above it. The Santa Fe selling price distribution is interesting in that it has a similar shape as that for Los Alamos. However, it peaks one price bracket below that for Los Alamos and lies largely between the other two distributions. Furthermore, note that 10% of the sales in the Santa Fe market lie in the \$500,000 and up price bracket. If this bracket were further segregated into \$50,000 increments, as are the lower brackets, we would see that Santa Fe has a bimodal selling price distribution. This characterizes the “trophy home” aspect of the Santa Fe market.



# LOS ALAMOS PAJARITO

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**Open House 11:00-1:00**  
**274 Bryce**



**\$299,000**  
 4BR, 2 BA, 2 GA  
 White Rock  
 Salazar/Metzger  
 MLS# 98106

- Beautifully renovated White Rock home on large lot.
- Brand new kitchen, bath, and 2 car garage with workshop area.
- Cathedral ceilings in master bedroom & bath living areas.
- Brick fireplace in living room, oak in hall & kitchen and six skylights.
- Two very smart and colorful birds - MUST SEE!

**Open House 11:00-1:00**  
**346 Kayenta**



**\$189,900**  
 3 BR, 2 BA, 1 GA  
 White Rock  
 Terry Salazar  
 #97317

- Really nice home located on a quiet cul-de-sac in White Rock.
- 1/2 acre lot with beautiful views.
- Lots of great features including wood burning stove, custom living room.
- Deck, patio and garden & more.
- This house is exceptionally clean & ready for you to move right in.

**New Listing**



**\$249,000**  
 4 BR, 3 BA, 2 GA  
 White Rock  
 Mary Beckman  
 MLS# 98248

- Well maintained one owner home on a quiet street. Courtyard entrance.
- All four bedrooms are large with space for play/study.
- Formal living and dining rooms, family room, also casual dining area.
- Approx. 2800 sq ft living space on approx. 1/4 acre landscaped lot.
- Large 2 car garage with lots of storage and workshop space.

**New Listing**



**\$189,000**  
 3 BR, 2 BA, 2 GA  
 White Rock  
 Joannette Marrero  
 MLS# 98243

- Simple charming, 3 bed room for the pool owner.
- Very close to the Channing Elementary school.
- Newly decorated kitchen with new tile work.
- Big front yard with covered patio.
- Large utility area with lots of storage.

**Price Reduced**



**\$320,000**  
 3 BR, 3 BA, 2 GA  
 Eastern Area  
 Harris  
 MLS# 98245

- Wooded setting downtown location, lots of privacy.
- 3 level, 2700 sq ft, 2700 sq ft. Lots of extras.
- Large bedrooms, large kitchen, large bathroom.
- Living, dining & family rooms, office and study/den.

**Featured Listing**



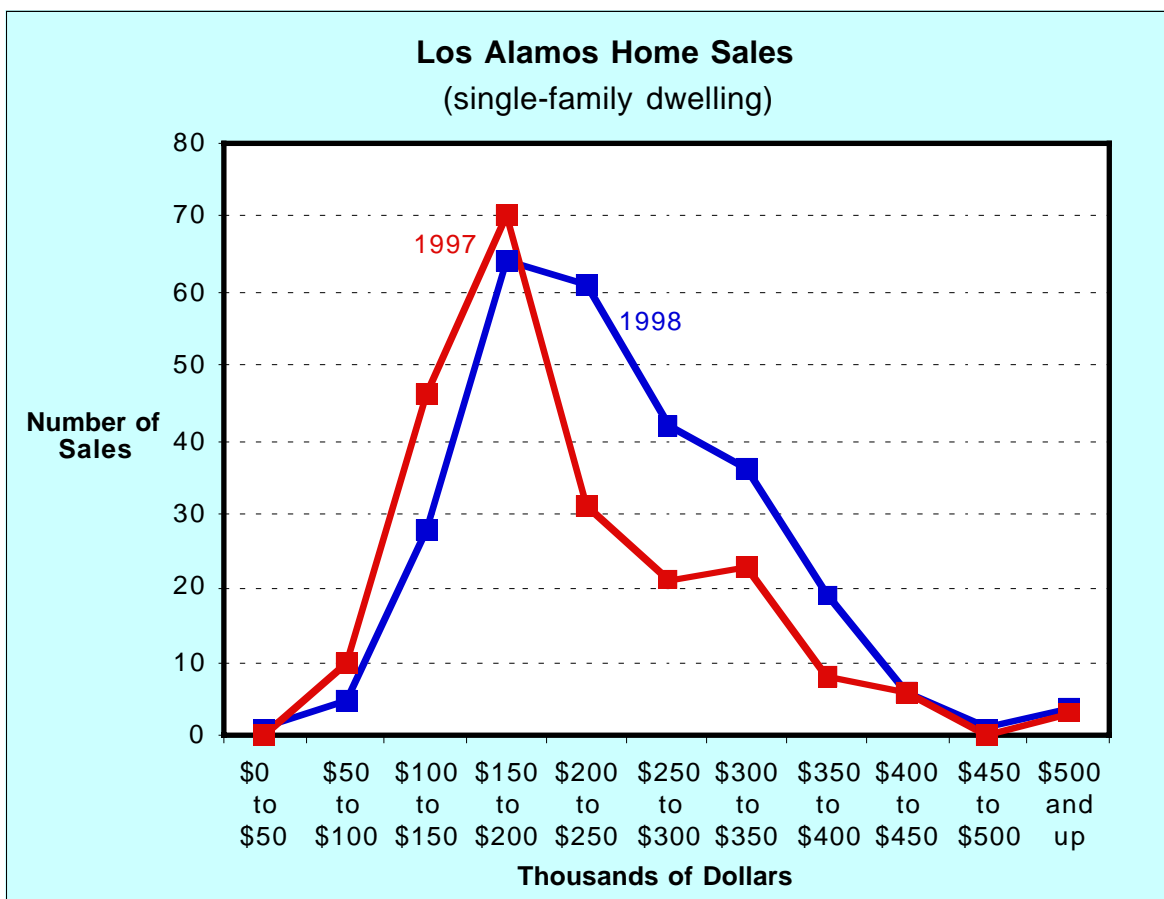
**\$459,510**  
 4 BR, 2 BA, 2 GA  
 North Mesa  
 Pixie  
 MLS# 98034

- Fantastic home! Perfect yourself to huge private master suite with quiet sitting room.
- Start and end your day with a relaxing cup of tea in the sunny porch.
- Wonderful living area with vaulted ceiling, a lot of 2042 sq ft, that's only \$120/sq ft.
- Great family room. Custom window treatments throughout.
- Complete light and window with custom curtains and custom built-in appliances.

## Realty Home Prices in Los Alamos – July 2000

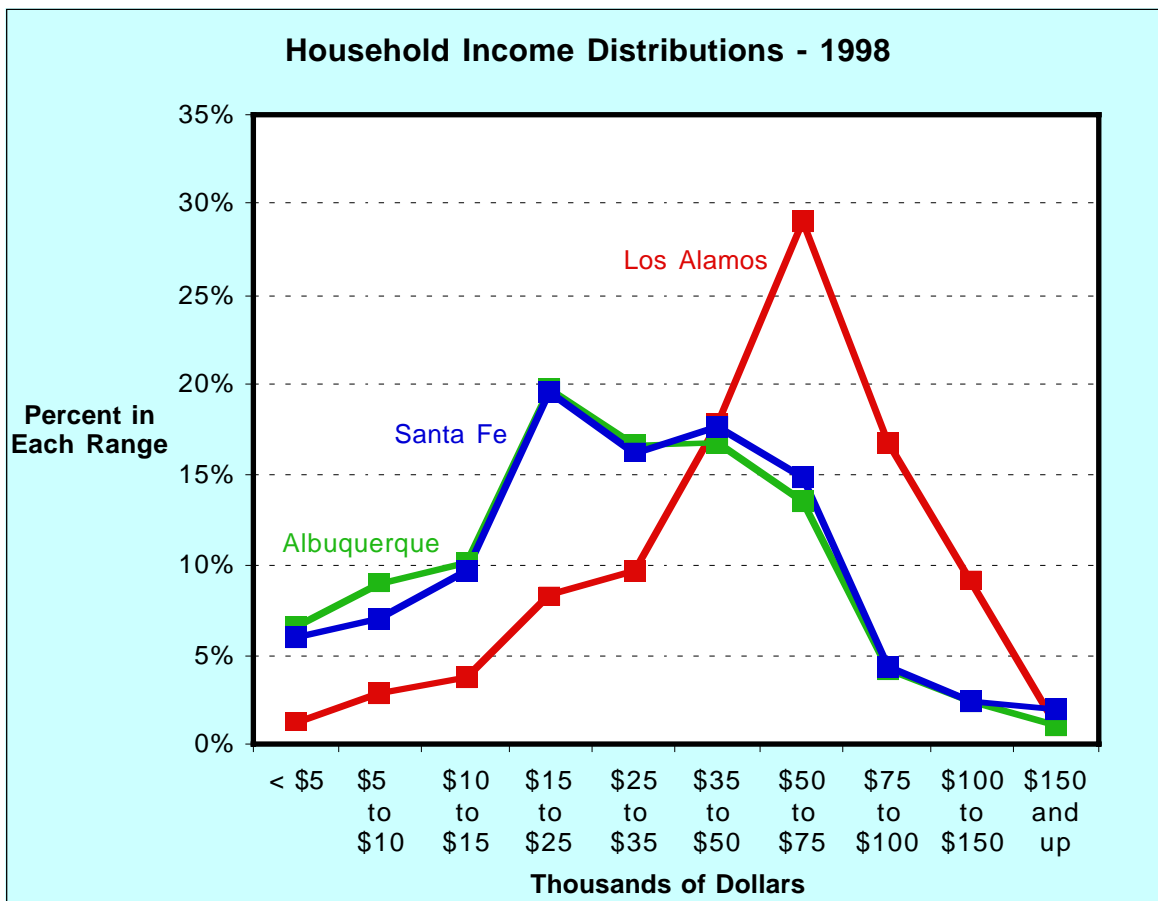
The housing stock in a community reflects a range of values of homes. For any given time period, or at any time, only a certain portion of the existing stock is on the market available for sale.





### Los Alamos Home Sales

The selling prices of homes on the market at any time are an approximation to the distribution of values embodied in the stock of houses. Furthermore, market conditions change from time to time and alter the values embodied in homes—both those available for sale and those not available for sale. This line graph compared the 1997 and 1998 Los Alamos distributions to show how stable the selling price distribution is from year to year. The distributions are different but have a similar general shape and the peak occurs in the same price bracket.

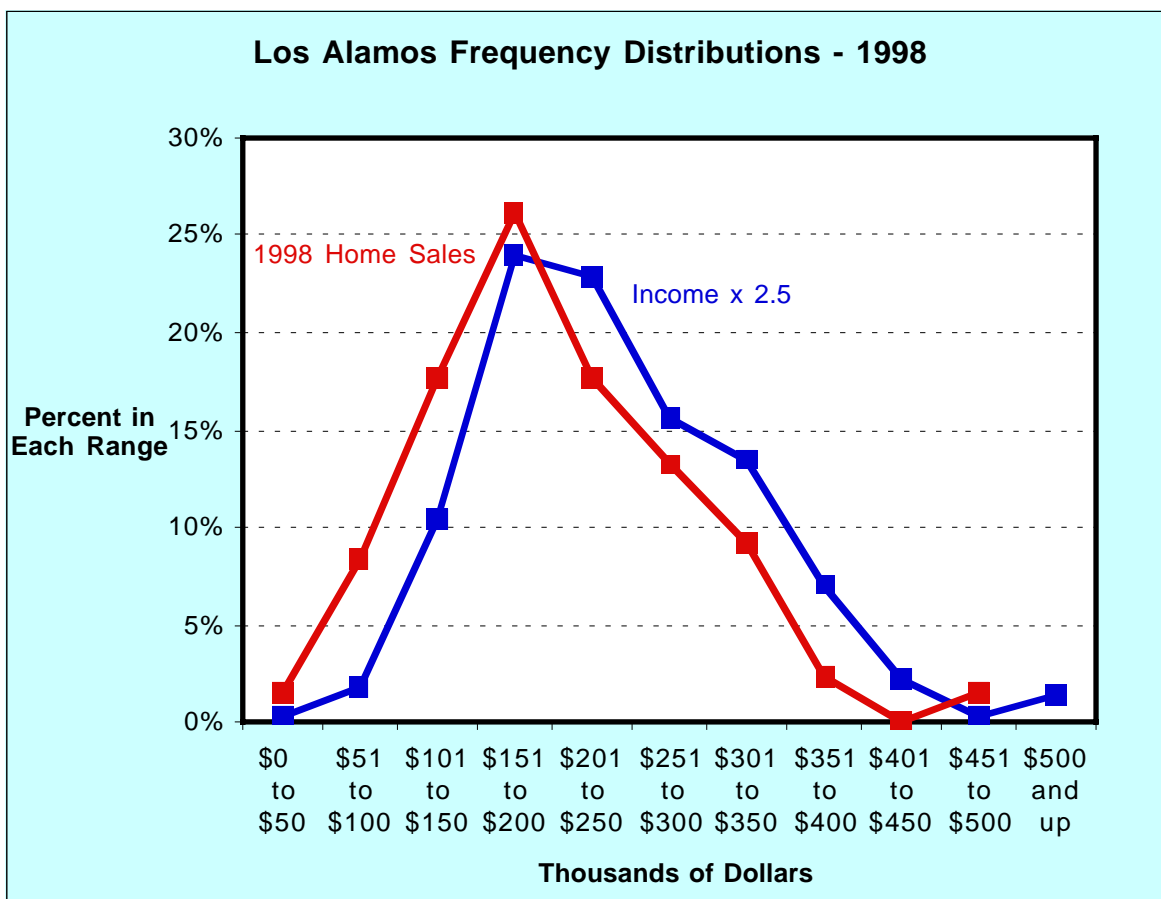


### Household Income Distributions – 1998

The Los Alamos income distribution lies significantly below that for Albuquerque and Santa Fe at household incomes below the \$35,000 to \$50,000 income bracket and significantly above the Albuquerque and Santa Fe distributions at household incomes above this bracket. Note that the Albuquerque and Santa Fe distributions are almost coincident. The people who buy and own the trophy homes of Santa Fe are, by and large, not in the Santa Fe work force and therefore not counted in this distribution of income.

Most individuals will purchase homes up to and sometimes beyond their capacity. Thus 28% (the Fannie Mae limit for percent of gross income going to service a mortgage) of a higher income supports a larger mortgage that, in turn, buys a larger, more expensive home. This is the fundamental explanation for Los Alamos high home prices. The other side of this coin is that if we want to have an Albuquerque sales price distribution (for Los Alamos) we will first have to get an Albuquerque income distribution.

To bring this back into the physician market discussion we note that physicians are customarily in the upper reaches of the income distributions in whatever communities they reside. Therefore, physicians would not, in general, be deterred by the high home prices in Los Alamos. So the higher cost of living caused primarily by the higher prices of homes should not be a recruitment or retention problem.



### Los Alamos Frequency Distributions – 1998

A rule of thumb in the residential real estate construction and finance industry is that individuals (or families in the case of more than one income earner) can afford a home that is approximately 2.5 times their annual gross income. This simply “falls out” of the rules pertaining to mortgage originations for the secondary, government-backed mortgage market. This line graph represents the veracity of this rule of thumb. The Los Alamos distribution of home sales for 1998 from the previous charts is shown together with the Los Alamos income distribution multiplied by a scalar of 2.5. The closeness of the two distributions and the similarity of their shapes are remarkable. Rarely in data analysis does one see such a close comparison. This provides a key to answer the question of why Los Alamos homes are so expensive.

High-End Lot Prices			
Los Alamos	Lot Size	Price	Price (\$/sq ft)
Ponderosa Estates I	11,326	\$84,000	\$7.42
Quemazon Communities I	12,110	\$85,000	\$7.02
Quemazon Communities I	32,191	\$165,000	\$5.13
Ponderosa Estates I	43,124	\$130,000	\$3.01
Albuquerque	Lot Size	Price	Price (\$/sq ft)
Overlook at High Desert I/Phase II	13,939	\$120,000	\$8.61
Overlook at High Desert I	15,246	\$90,000	\$5.90
Overlook at High Desert I/Phase II	20,037	\$220,000	\$10.98
Oxbow Bluff (West Mesa)	20,562	\$125,000	\$6.05
Desert Highlands at High Desert I	26,449	\$160,000	\$6.05
Overlook at High Desert I	31,363	\$185,000	\$5.90
Oxbow Bluff (West Mesa)	36,033	\$275,000	\$7.63
Desert Highlands at High Desert II	37,714	\$210,000	\$5.57
Desert Highlands at High Desert I	87,120	\$280,000	\$3.21
Desert Highlands at High Desert II	102,405	\$500,000	\$4.88
Santa Fe	Lot Size	Price	Price (\$/sq ft)
Gonzales Road	43,560	\$128,000	\$2.94
Valle Lejano Subdivision	43,560	\$149,000	\$3.42
Kachina Hills	46,174	\$125,000	\$2.71
Tano Ridge Subdivision	94,090	\$125,000	\$1.33

### High-End Lot Prices

This table shows selected development areas in Los Alamos, Albuquerque, and Santa Fe that are being marketed to individuals and families in the higher income brackets. Lot sizes vary significantly but in most cases today, developers are placing more and more restrictions on building to preserve local environmental features. Most lots, even though they might be quite large in total area, have a fairly small specified building pad that greatly restricts the placement of the home and the land area that it may occupy. Thus, even though an individual might buy an acre lot, most of the square footage is not to be disturbed. They represent house lots only—no horses, no outbuildings, and no commercial activity allowed.

Residential Real Estate Comparison						
Comparison Item	Los Alamos 1	Los Alamos 2	Albuquerque 1	Albuquerque 2	Santa Fe 1	Santa Fe 2
Year Built	1997	1999	1996	1992	1996	1999
Price	\$410,000	\$427,000	\$399,900	\$399,900	\$409,900	\$423,750
Size (sq ft)	3,200	2,522	3,020	3,411	3,480	2,750
Price (sq ft)	\$128	\$167	\$132	\$117	\$118	\$154
Lot Size	.25 acre	.25 acre	.89 acre	.20 acre	.22 acre	.33 acre
Construction	frame/ stucco	frame/ stucco	frame/ stucco	frame/ stucco	frame/ stucco	frame/ stucco
Number of Bedrooms	4	3	5	3	4	4
Number of Bathrooms	4	3	4	2.5	3	2.5
Heating System	radiant	radiant	radiant	central forced air	radiant	radiant
Cooling System	no	no	evap	evap	no	no
Formal Dining	yes	yes	yes	yes	yes	yes
Formal Living	yes	no	yes/cathedral	no	yes	yes
Garage	3	3	4	3	yes	yes
Water	city	city	well	city	city	city
Sewer	city	city	septic	city	city	city
Fireplace	1	1	2	2	1	1
Intercom/Security	yes	yes	yes	yes	yes	yes
Central Vacuum	yes	yes	yes	yes	unknown	unknown
Other Features	canyon lot	cul de sac lot	granite counters	on golf course	many southwest finishes	beautiful southwest finishes

### Residential Real Estate Comparison

This table lists two homes each in Los Alamos, Albuquerque, and Santa Fe in the \$400,000 price bracket. While it is difficult to compare these homes solely on paper, the style of construction, mechanical equipment, amenities, and features are similar. Asking prices per square foot are shown for each of the homes. This comparison is very limited in terms of numbers. However, it does indicate that individuals with the income to support the purchase of an expensive home will get value in Los Alamos similar to what they could get in Albuquerque or Santa Fe.

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# Hospitals

Residents, community groups such as the Community Healthcare Roundtable, and LANL personnel and management have had various concerns about activities and prospects at the Los Alamos Medical Center raising the following questions about the local hospital.

1. Are we in danger of losing our hospital?
2. How does Los Alamos Medical Center compare with other small community hospitals?
3. How should Los Alamos National Laboratory interact and negotiate with Los Alamos Medical Center and the Los Alamos Physician Hospital Organization?
4. Should Los Alamos National Laboratory support higher insurance reimbursement rates for Los Alamos Medical Center?
5. Should Los Alamos National Laboratory provide operational funds for Los Alamos Medical Center emergency room and other services?

Employees and retirees at LANL obtain hospital related health care services from a variety of providers in the northern New Mexico region, New Mexico, and the nation. Although the Laboratory is most closely associated with Los Alamos County, numerous employees live in the surrounding counties of Rio Arriba, Sandoval, Santa Fe, and Bernalillo. Hospitals are present in each county except Sandoval County. Los Alamos relies on University Hospital in Albuquerque for the highest level trauma care, as well as other Albuquerque hospitals for more severe health care needs and procedures. St. Vincent Hospital in Santa Fe is used for less severe trauma care and many other services. Española Hospital serves numerous LANL employees and retirees, and can handle low-level trauma cases. Los Alamos Medical Center is not classified as a trauma center, does not perform heart procedures, and generally performs less severe case mix procedures than larger hospitals.

Los Alamos Medical Center is owned and operated

by Banner Health System, a financially successful, secular, not-for-profit organization. Banner Health System is comprised of 32 hospitals and 32 nursing homes spread across 15 states in 60 communities from California to Iowa. Central management and system services are located in Fargo, North Dakota. LAMC was built in 1951 and in 1963 was sold for \$1 to the Lutheran Hospitals and Homes Society (a precursor of Banner Health System) after a community vote.

The 47-bed LAMC is considered a small-community hospital. Occupancy rate is a relatively low 30% compared to 53% for hospitals in similar communities. The American Hospital Association (AHA) defines community hospital as a nonfederal, general and/or special short-term (average length of stay is less than 30 days) hospital whose facilities and services are available to the public. Los Alamos Medical Center does not qualify as a rural hospital for Medicare reimbursement purposes. The generally accepted definition of a rural hospital is one that has fewer than 76 acute-care beds and serves a community of less than 15,000.

Los Alamos Medical Center is doing well operationally and financially compared to most hospitals in 119 counties similar in population size to Los Alamos and in the northern New Mexico region. Los Alamos is not in danger of losing the hospital. LAMC is normal in most areas and above average in a few areas such as financial margin, number of outpatient visits, and charges for Medicare and technical fees. It offers a broad range of services.

LAMC has a high number of outpatient visits, a major contributor to the LAMC's high financial revenue margin. Because LAMC maintains a higher financial margin than hospitals in similar communities, it will be equipped to weather lower Medicare reimbursement in 2000 and 2001 due to the Balanced Budget and Balanced Budget Refinement Acts. Los Alamos Medical Center has a much lower potential for Medicaid, indigent, and nonpaying patients because Los Alamos has a small number of households with low income. Los Alamos Medi-

## Hospitals

cal Center has high Medicare inpatient charges which generates more revenue for the hospital. Banner Health System, the owner and manager of LAMC, has annual revenues of \$2 billion providing standby financial strength to LAMC. These factors contribute to the overall conclusion that Los Alamos is a very favorable location as regards to patient demographics and financial status to own and manage a successful nonprofit hospital.

The entity that owns the hospital facility has the ultimate financial responsibility for a community hospital. Owners of a community hospital can be nonfederal government, a not-for-profit secular or religious organization, or a for-profit organization. In 1963, Los Alamos County citizens voted to divest financial responsibility and control of the hospital to a not-for-profit organization that was not located in or near the community.

It is very common for emergency departments to operate in the red or barely break even. Cost allocation between profitable and less profitable service centers is a common practice in hospital finance. LAMC is doing well financially. Approximately 40% of unplanned hospital inpatient admissions originate in emergency departments generating important business for the institution as a whole. Emergency departments utilize services from and generate revenue for other departments such as diagnostic imaging, laboratory, and pharmacy. The emergency department services offered by LAMC are typical to those offered by the other 12 western hospitals in counties similar in size to Los Alamos that were interviewed for this study. Other Banner Health Hospitals of similar bed size have a similar percentage of overall expenses spent on emergency departments.

The current level of emergency department services offered at LAMC are not required to meet DOE requirements. However, the residents of the community expect to have an emergency department open 24 hours a day, 7 days a week, with a physician present. Five DOE sites were interviewed concerning emergency management and their arrangements with local hospitals. None of the DOE sites contacted grant operational funds to local hospital

emergency rooms with a memorandum of understanding. LANL and Sandia are the only sites that provide funding for data systems for drug interaction and poison control.

LANL employees contribute a steady source of revenue through well-insured patients. Both the Española Hospital and St. Vincent Hospital directly serve LANL personnel and their families and have memorandum of understanding agreements with the Department of Energy to provide support in the event of a catastrophic incident related to the release of radioactivity.



Northern New Mexico Regional Hospital Market				
	Los Alamos Medical Center (Los Alamos)	Española Hospital (Española)	St. Vincent Hospital (Santa Fe)	Holy Cross Hospital (Taos)
Year Built	1951	1948	1970s	
Managed By	Banner/Lutheran Health System since 1963	Presbyterian	community	Quorum Health
Number of Beds	47	80	247	34
1998 Expenses	\$18.8 million	\$17.9 million	\$97.4 million	\$14.3 million
1997/1998 Payroll	\$6.5 million	\$8.5 million	\$42.0 million	\$5.5 million
Number of Employees	268	295	1,117	181
Number of Births	232	302	1,529	289

### Northern New Mexico Regional Hospital Market

The northern New Mexico regional hospital market is made up of Los Alamos Medical Center, Española Hospital, St. Vincent Hospital, and Holy Cross Hospital in Taos. Los Alamos was compared to hospitals in the northern New Mexico region based on available data. Although Northeast Regional Hospital in Las Vegas, New Mexico is part of the northern New Mexico region, it was not included in most of our analyses because it has very little market overlap with Los Alamos Medical Center. Each of the hospitals in the chart are owned by a nonprofit organization, however, Holy Cross Hospital is managed by Quorum Health, a for-profit health care service company.



## **Los Alamos Medical Center**

### **Los Alamos, New Mexico**

- built in 1951
- owned and managed by Lutheran Health (now Banner Health) System since 1963
- 47 beds in 1998
- \$18.8 million 1998 expenses
- \$6.5 million payroll
- 268 employees
- 232 births



## **Española Hospital**

### **Española, New Mexico**

- built in 1948
- owned and managed by Presbyterian
- 80 beds in 1998
- \$17.9 million 1998 expenses
- \$8.5 million payroll
- 295 employees
- 302 births



## **St. Vincent Hospital**

### **Santa Fe, New Mexico**

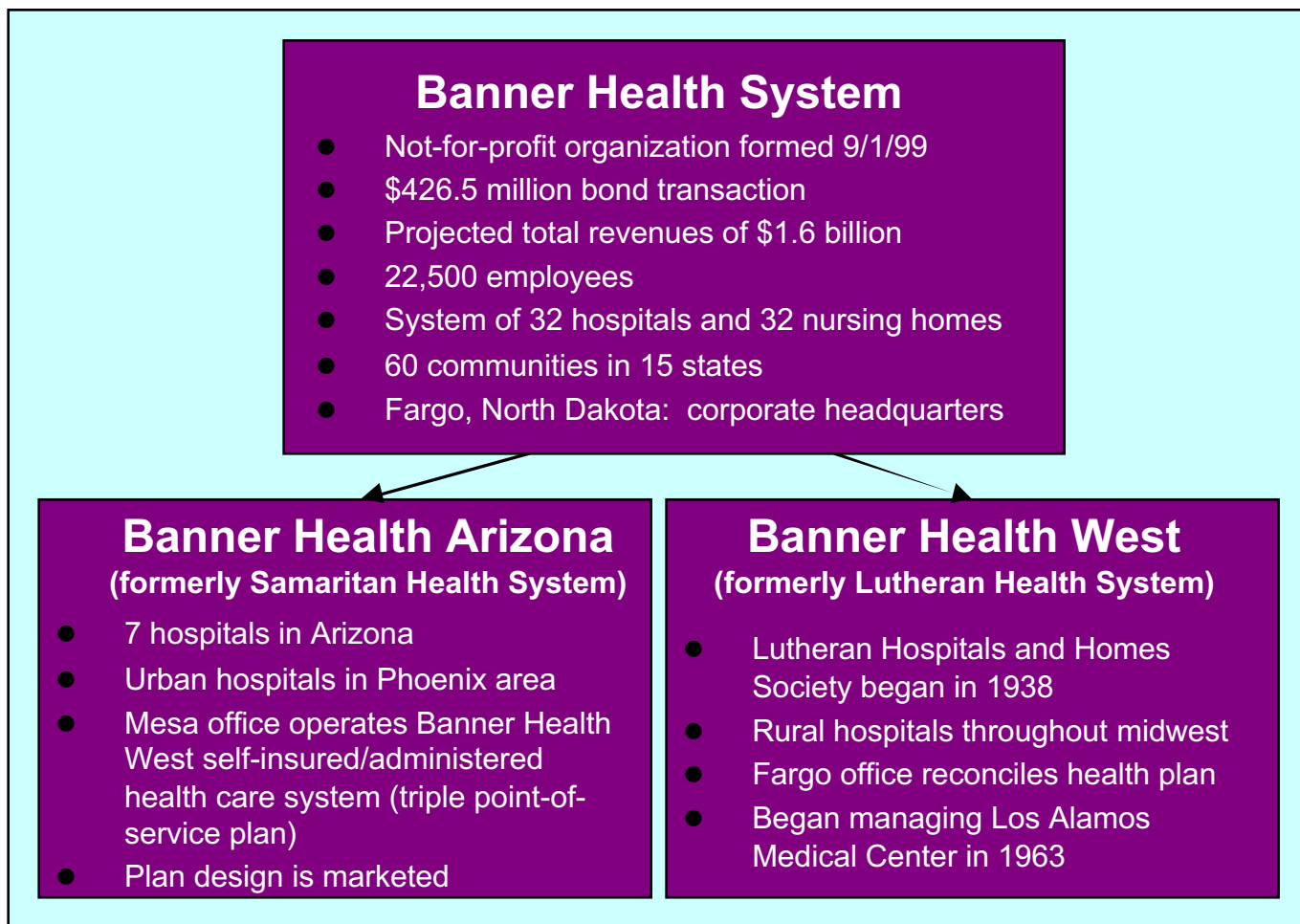
- built in 1970s
- community owned and managed
- 247 beds
- \$97.4 million 1998 expenses
- \$42 million payroll
- 1,117 employees
- 1,529 births



## **Holy Cross Hospital**

### **Taos, New Mexico**

- managed by Quorum Health
- 34 beds in 1998
- \$14.3 million 1998 expenses
- \$5.5 million payroll
- 181 employees
- 289 births



### Banner Health System

Banner Health System was created on September 1, 1999 through a merger of Samaritan Health System located in Arizona and Lutheran Health System located in the midwest. The new organization represents one of the largest multistate, secular, not-for-profit health care systems in the United States with combined assets of \$1.9 billion and total revenues of \$1.6 billion. Banner Health System owns, leases, and manages hospitals and nursing homes. Los Alamos Medical Center is managed as well as owned by Banner Health System.

A not-for-profit organization, as with any private organization, has full financial responsibility for assets that they own and manage. In 1963, Los Alamos County divested itself of hospital ownership and the community voted to sell the hospital to the Lutheran Hospitals and Homes Society (now Banner Health System) for \$1.

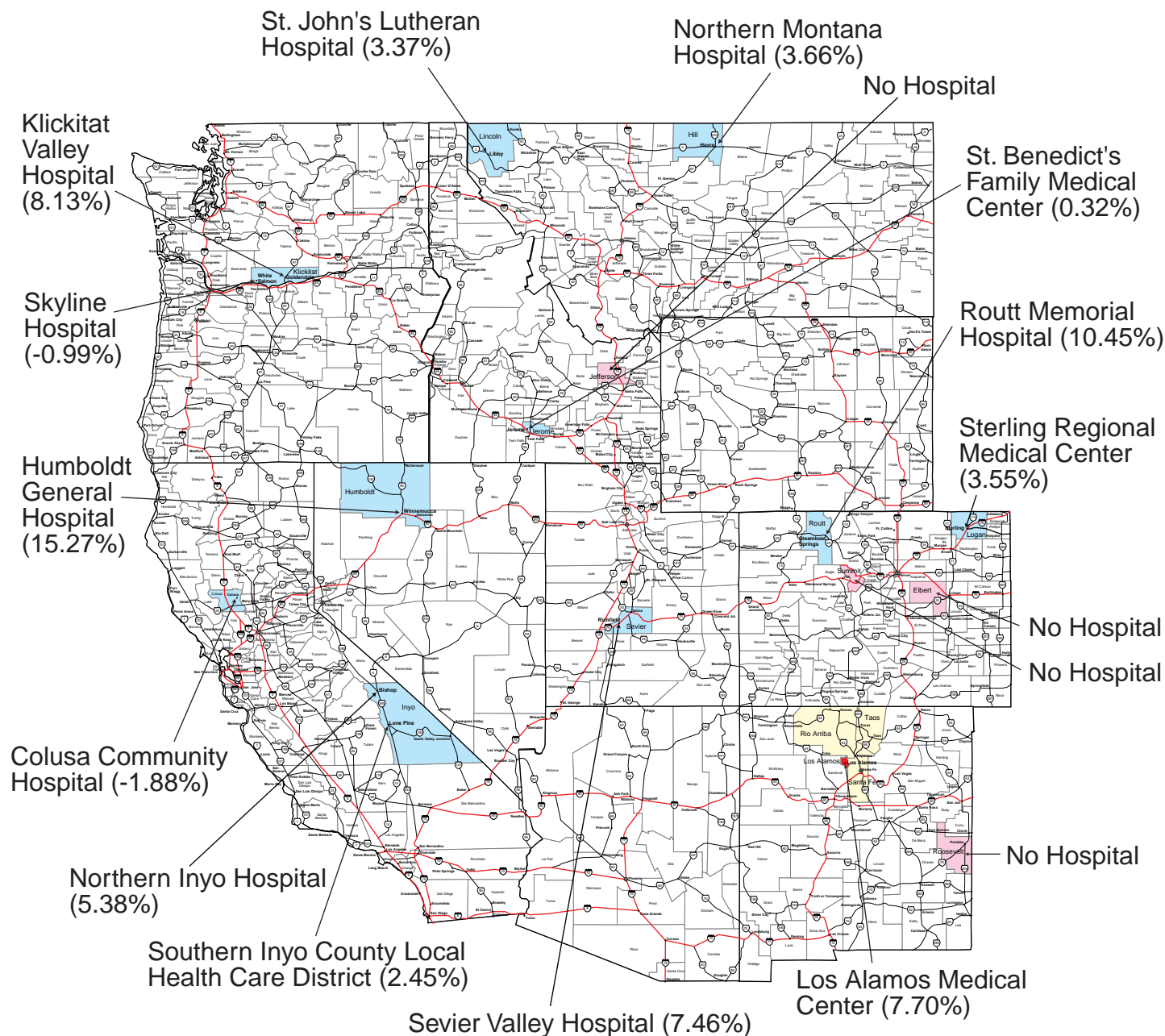




### **Los Alamos Visiting Nurse Service**

Los Alamos Visiting Nurses Service (LAVNS) is a nonprofit program that provides certain medical and social services to patients at home. In 1973, two nurses formed the organization when they recognized the need for nursing services in the home. LAVNS provides professional 24-hour a day nursing care, physical therapy, occupational therapy, speech therapy, social services, home health aid services, and hospice services. LAMC has a similar service, Home and Community Care, which provides durable medical equipment service in addition to home care.

## Western Small Community Hospitals (1997/1998 Hospital Margins)



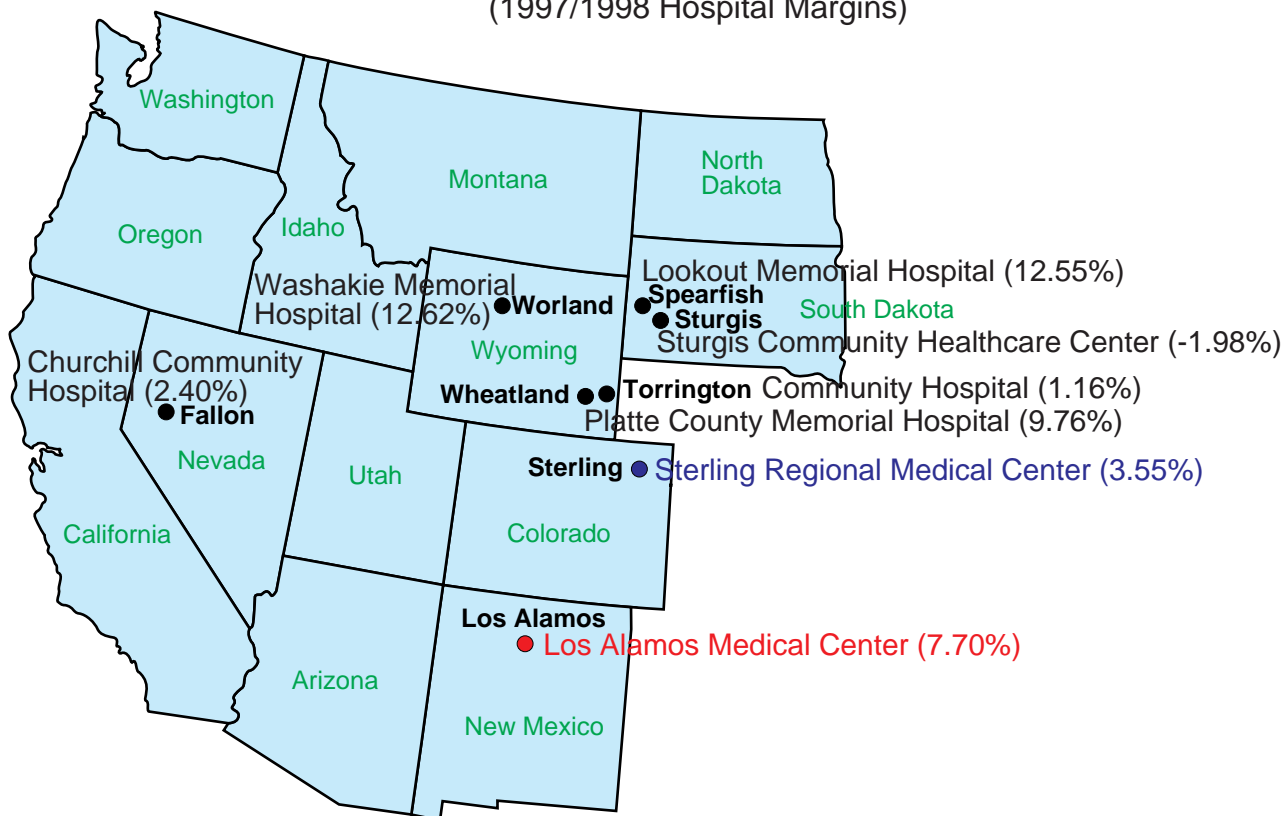
### Western Small-Community Hospitals

Because Los Alamos is a western community, a western subset of 15 of the 119 counties was identified and looked at more closely. Data was collected on the same variables for all 119 communities. Four counties have no hospital (Elbert and Summit Counties in Colorado, Roosevelt County in New Mexico, and Jefferson County in Idaho). Two counties have 2 hospitals, Klickitat in Washington and Inyo in California – making a total of 13 western hospitals. In addition, phone interviews were conducted with the western hospitals concerning general functioning of their emergency departments and how business is conducted.



## Banner Health System Hospitals

(1997/1998 Hospital Margins)



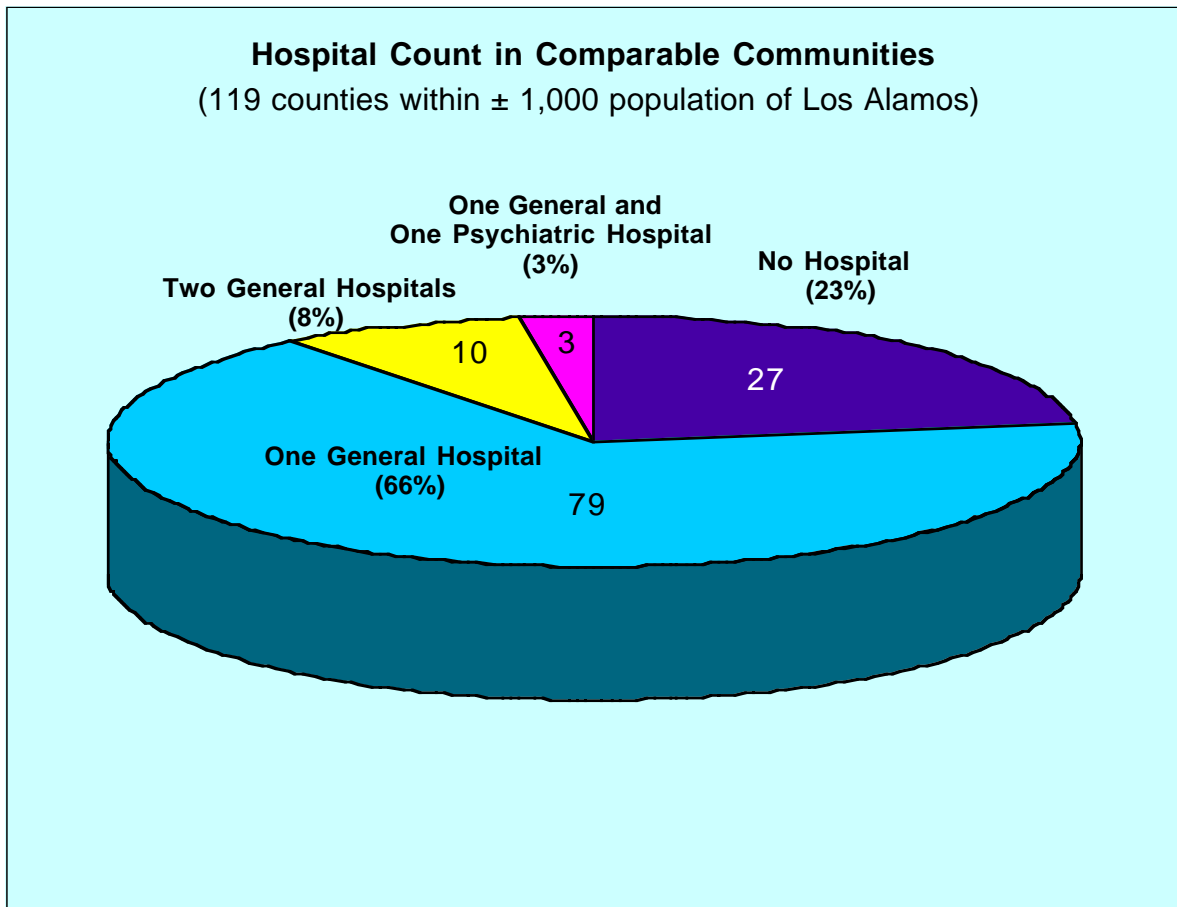
### Banner Health System Hospitals

Eight Banner Health System hospitals were also looked at for a general comparison of emergency departments.

Seven were selected by LAMC administration. The seven hospitals were

1. Churchill Community Hospital in Fallon, Nevada;
2. Washakie Memorial Hospital in Worland, Wyoming;
3. Platte County Memorial Hospital in Wheatland, Wyoming;
4. Community Hospital in Torrington, Wyoming;
5. Lookout Memorial Hospital in Spearfish, South Dakota;
6. Sturgis Community Healthcare Center in Sturgis, South Dakota; and
7. Los Alamos Medical Center in Los Alamos, New Mexico (shown in red).

The eighth hospital, Sterling Regional Medical Center in Sterling, Colorado (shown in blue) was not suggested by Los Alamos Medical Center but is managed by Banner Health System and is part of the western subset.



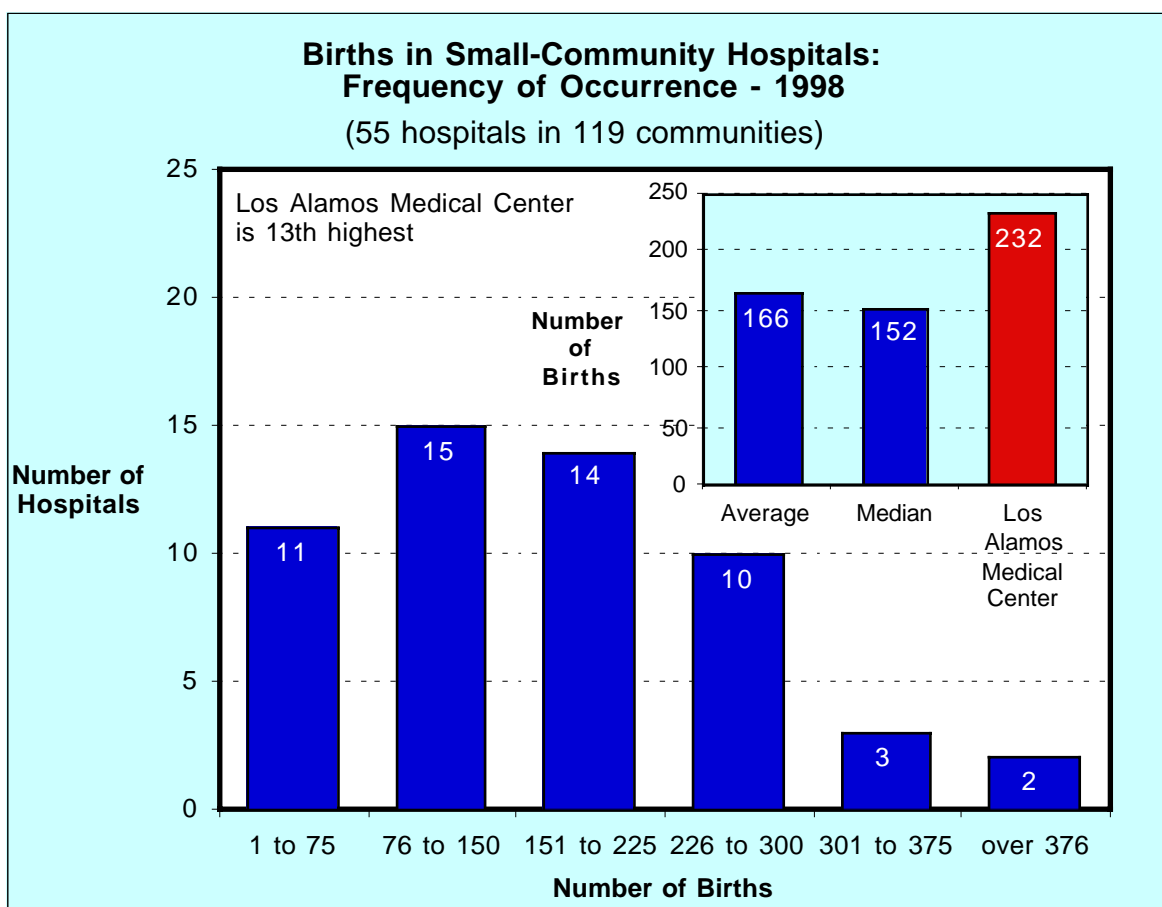
### Hospital Count in Comparable Communities

Los Alamos reflects the community norm in having one general hospital. Out of a sample of 119 small communities with populations  $\pm 1,000$  of the 18,344 population of Los Alamos, 79 or 66% have one general hospital, 27 have no hospital, 10 communities have 2 hospitals, and 3 have one general hospital and one psychiatric hospital.

**Small-Community Hospital Comparison Summary (1997-1998)**

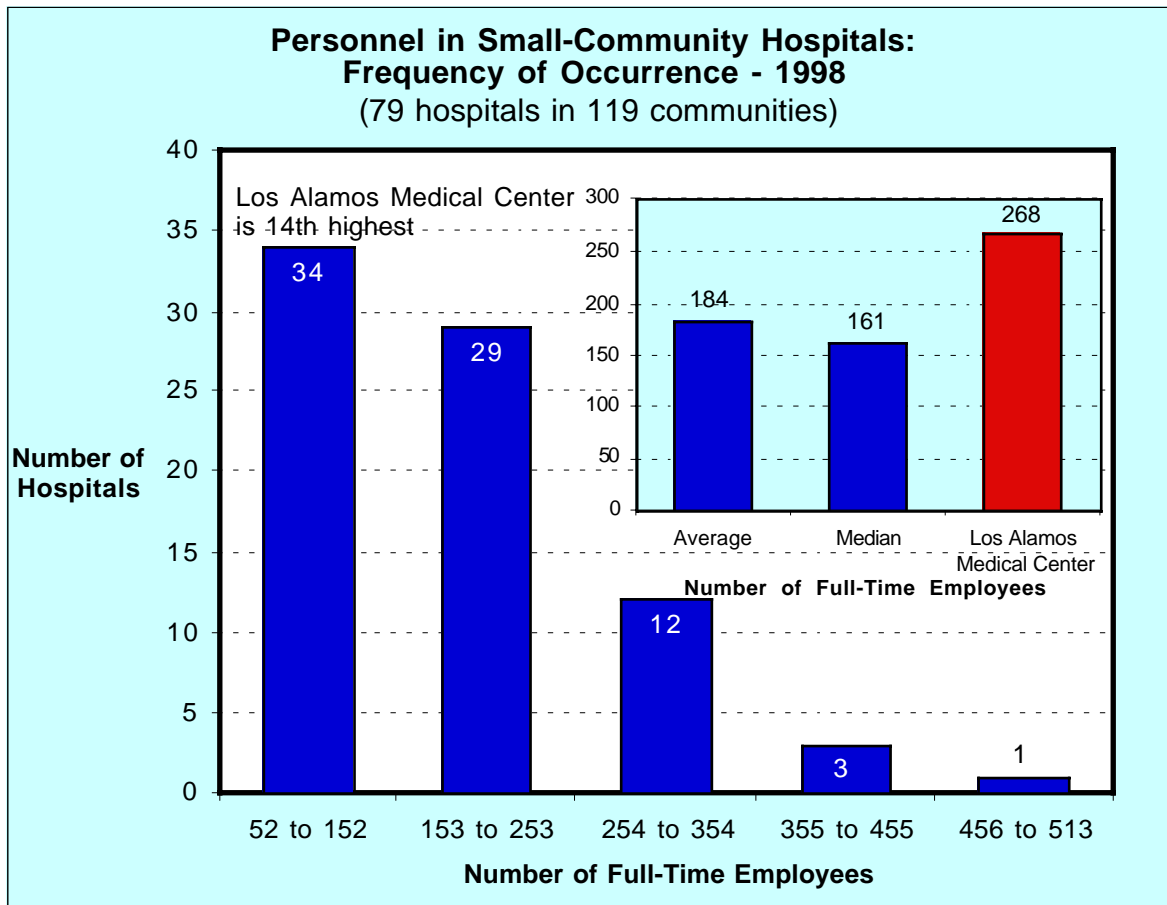
In most areas LAMC is normal. Discussion will begin with areas where LAMC is normal and then move to the statistics where LAMC is unusual. The following table summarizes, ranks, and compares LAMC to hospital medians in the 119 comparable communities as well as a subset of 15 western small communities. The statistics highlighted in blue are normal. The statistics in pink are unusually high and include areas where LAMC was ranked in the top 15%. The statistics in yellow are unusually low and include areas where LAMC was ranked in the bottom 15%.

Small-Community Hospital Comparison Summary (1997-1998)							
Annual Statistic	Findings	Los Alamos Medical Center (LAMC)	Small-Community Median	Western-Community Median	LAMCs Rank with Small-Community Hospitals	Number in Sample	Median Position
<b>Outpatient Visits</b> (number)	LAMC generates substantial revenue from outpatient services	85,542	21,450	24,108	3	80	above
<b>Average Medicare Charges</b> (per inpatient visit)	LAMC has higher charges	\$9,629	\$6,192	\$7,326	4	98	above
<b>Average Medicare Inpatient Charges Divided by Case Mix Index</b>	normal	\$8,196	\$5,618	\$6,612	9	98	above
<b>Margin</b> (percent)	LAMC is doing better than most	7.70%	2.90%	3.66%	10	100	above
<b>Total Expenses</b>	Higher volume of outpatient services generates added expenses	\$18.5 million	\$10.1 million	\$10.1 million	10	74	above
<b>Medicare Case Mix Index</b>	normal	1.1749	1.0559	1.0697	14	98	above
<b>Births</b>	normal	232.0	152.0	230.5	13	55	above
<b>Personnel</b> (number)	normal	268.0	161.0	150.5	14	79	above
<b>Total Payroll Expenses</b>	normal	\$6.5 million	\$4.1 million	\$4.0 million	17	74	above
<b>Admissions</b> (number)	normal	1,539	1,139	1,151	30	83	above
<b>Staffed Beds</b> (number)	Below median census justifies lowering number of staffed beds	47.0	37.5	27.0	30	98	above
<b>Average Full-Time Employee Cost</b>	normal	\$24,230	\$24,510	\$28,809	44	73	below
<b>Average Daily Census</b>	normal	14	20	11	52	82	below
<b>Medicare Average Length of Stay</b> (number of days)	normal	4.3	4.4	3.7	53	98	below
<b>Medicare Patients</b> (number)	normal	453	565	346	63	98	below
<b>Ratio of Payroll to Total Expenses</b>	Higher volume of outpatient visits generates nonpayroll expenses	34%	45%	43%	72	74	below
<b>Ratio of Medicare Inpatients to Admissions</b>	Older population is either smaller, healthier, or obtains services elsewhere	29%	51%	36%	78	81	below



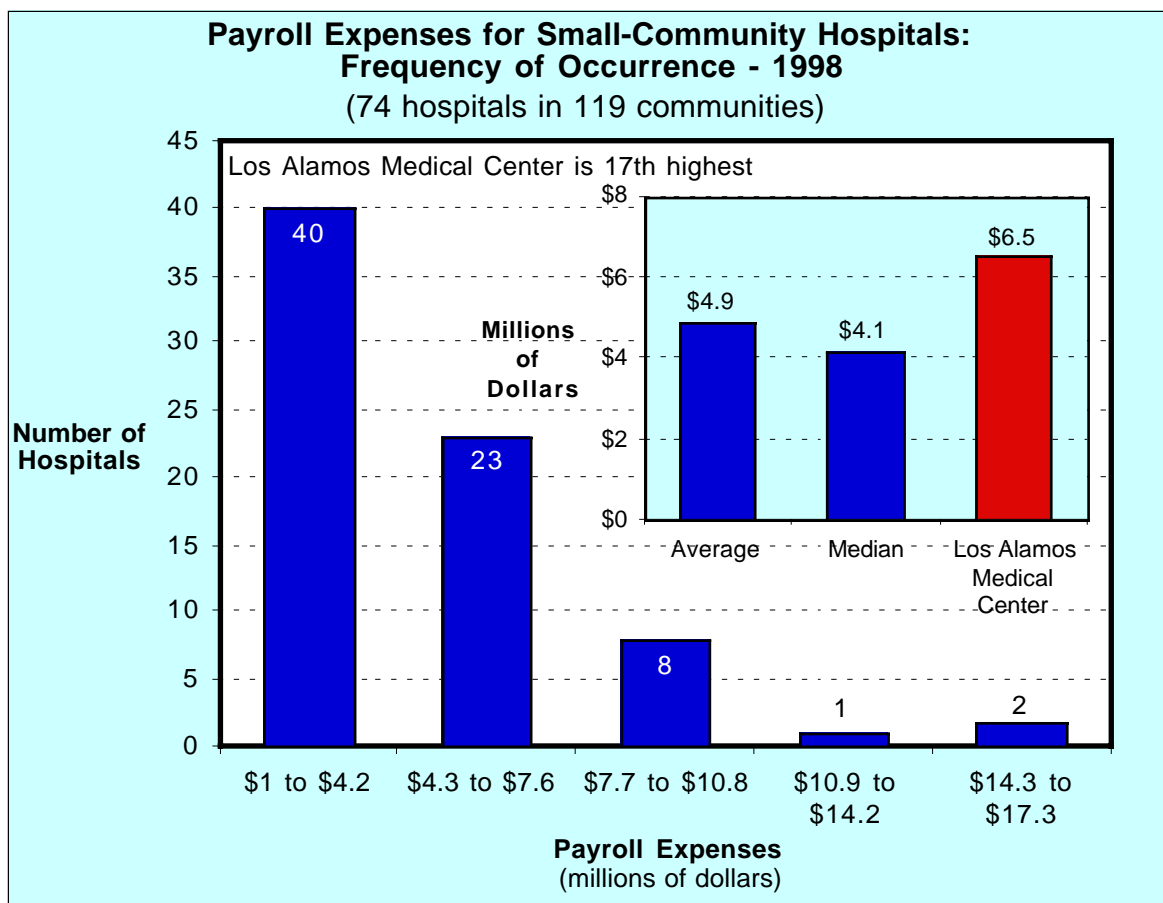
### Births in Small-Community Hospitals: Frequency of Occurrence – 1998

LAMC is normal in number of births. In general, if a hospital is used for births, other hospital services will be used as well. Number of births includes the number of infants born in the hospital and accepted for service in a newborn infant bassinet during a 12-month period not including stillbirths. In 1998, LAMC had 232 births. The median for small-community hospitals was 152 and for western small-community hospitals 230.5. LAMC ranked 13<sup>th</sup> out of a sample of 55 hospitals. LAMC was well above the median for the total sample and slightly above for the western subset.



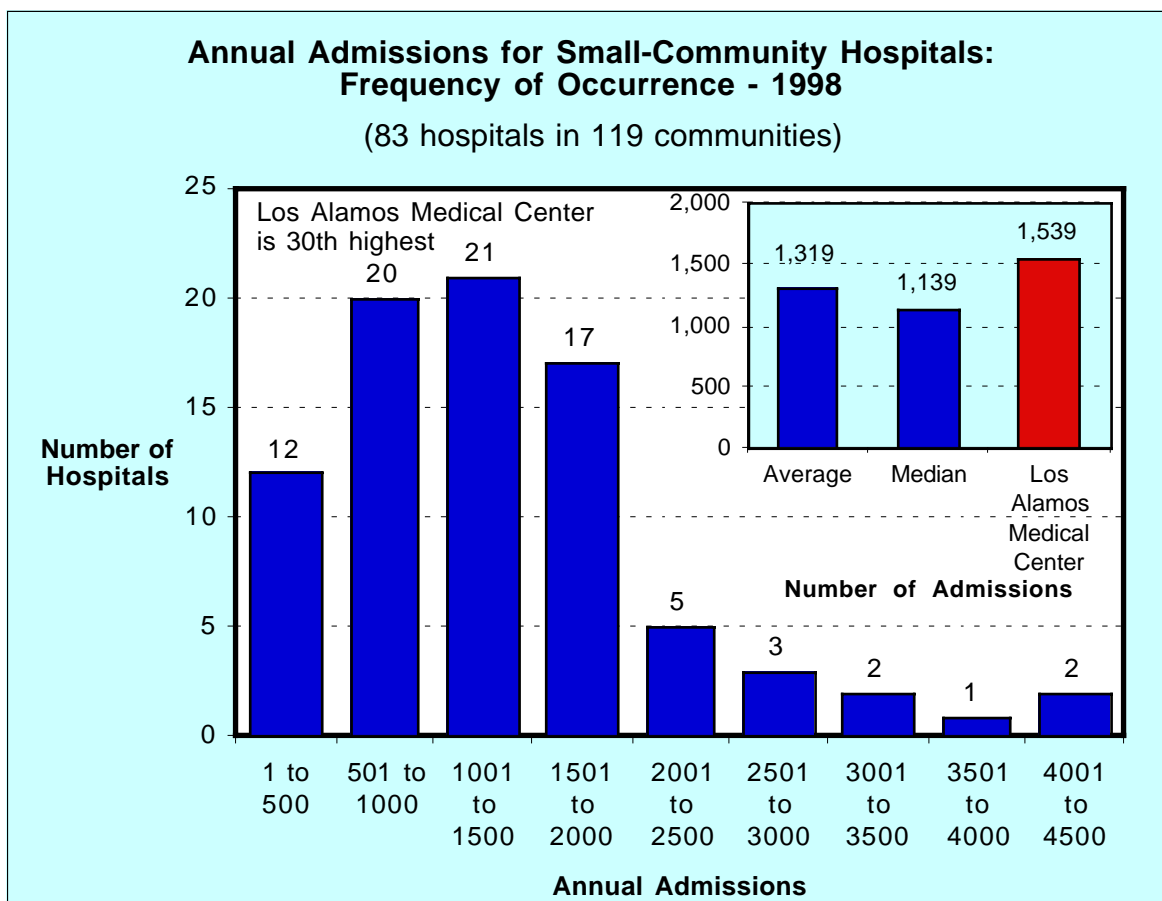
### Personnel in Small-Community Hospitals: Frequency of Occurrence – 1998

LAMC is normal in number of employees. In general, if a hospital is well staffed it can provide a variety of services and is an important employer in the community. Employees are persons included on the hospital payroll using full-time equivalents of part-time personnel. (Two part-time persons equal one full-time person.) In 1998, LAMC had 268 employees. The median for small-community hospitals was 161 and for western small-community hospitals 150.5. LAMC ranked 14<sup>th</sup> out of a sample of 79 hospitals. LAMC was well above the median for both the total sample and the western subset.



### Payroll Expenses for Small-Community Hospitals: Frequency of Occurrence – 1998

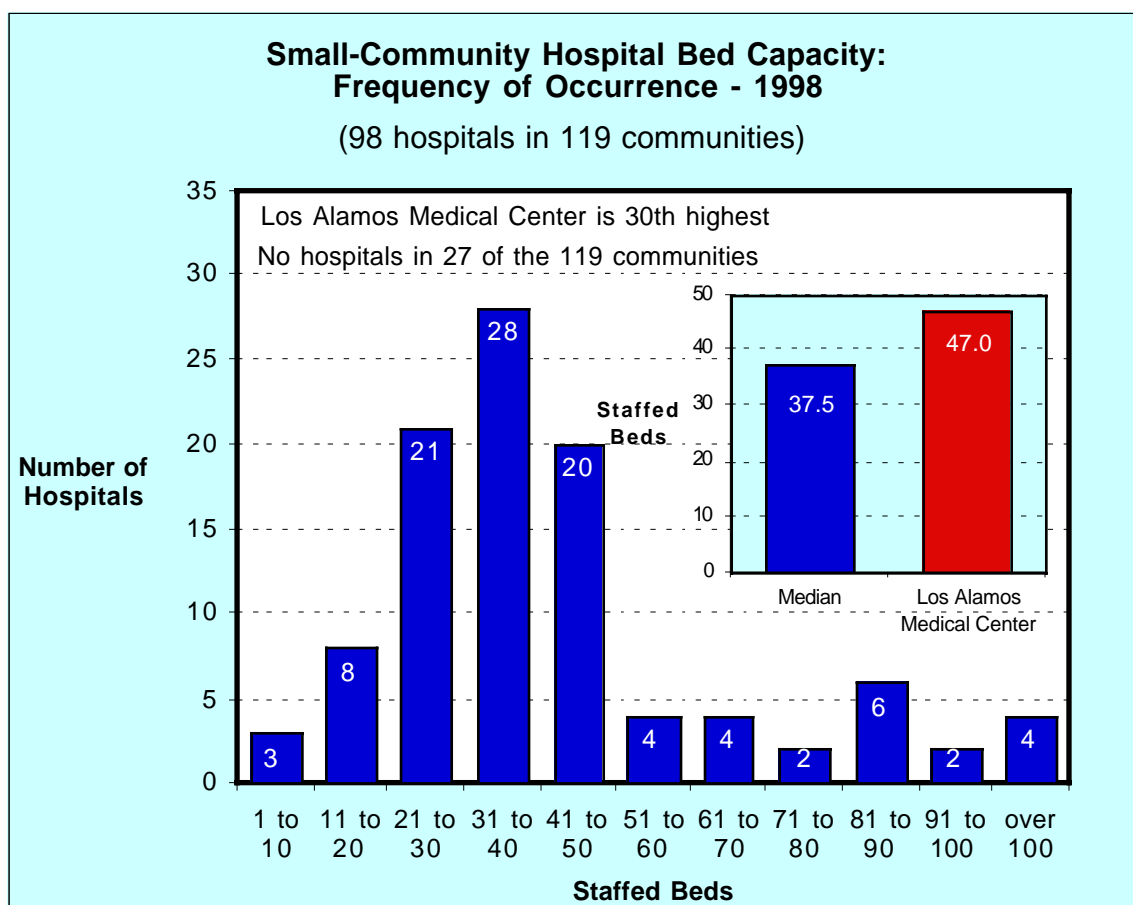
LAMC is normal in payroll expenditures. Payroll expenses include all salaries and wages. In 1998, LAMC spent \$6.5 million on payroll expenses. The median for small-community hospitals was \$4.1 million and for western small-community hospitals \$4 million. LAMC ranked 17<sup>th</sup> out of a sample of 74 hospitals. LAMC was well above the median for both the total sample and the western subset.



### Annual Admissions for Small-Community Hospitals: Frequency of Occurrence – 1998

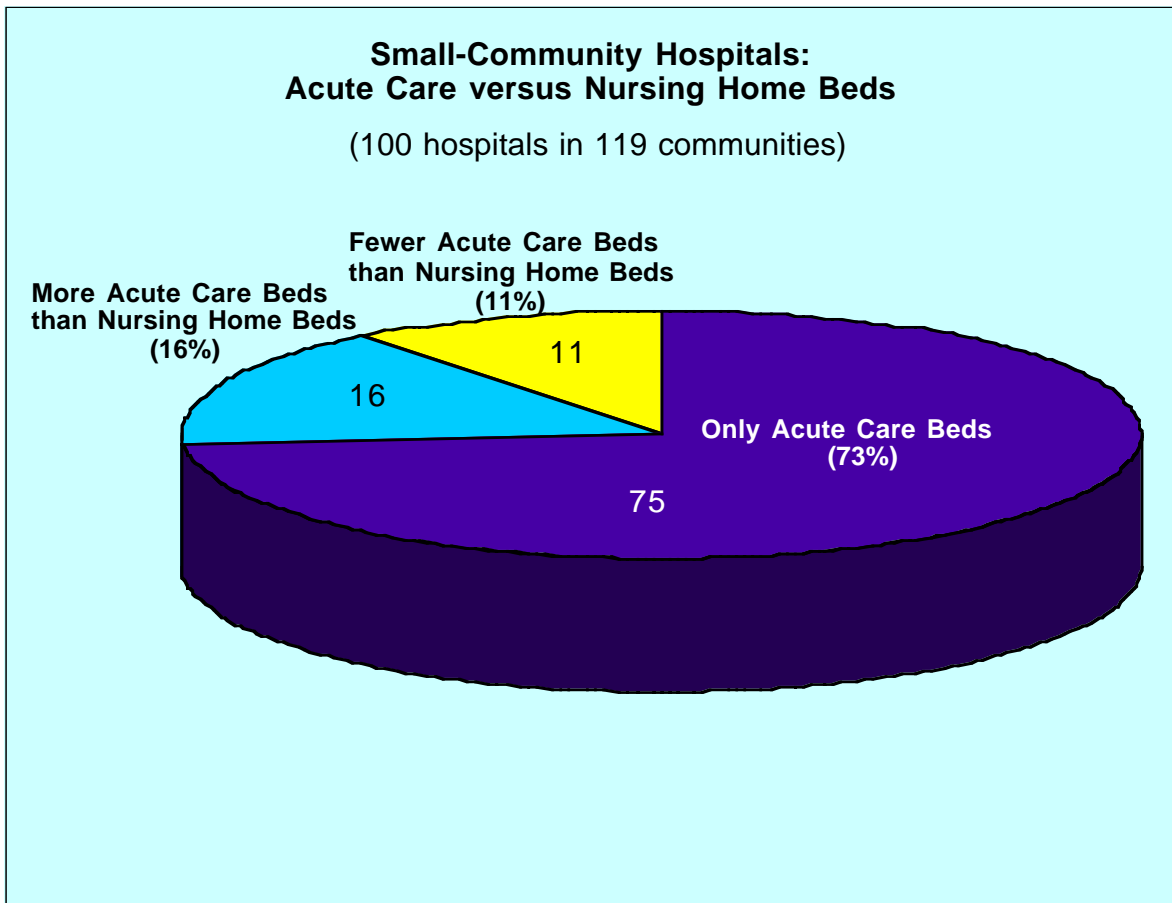
LAMC is normal in annual admissions. Admissions are the number of patients accepted for inpatient service during a 12-month period not including newborns. In 1998, LAMC had 1,539 admissions to inpatient acute care beds. The median for small-community hospitals was 1,139 and for western small-community hospitals 1,151. LAMC ranked 30<sup>th</sup> out of a sample of 83 hospitals. LAMC was above the median for both the total sample and for the western subset.





### Small-Community Hospital Bed Capacity: Frequency of Occurrence – 1998

LAMC is normal in number of staffed acute beds. However, the average daily census must also be considered to determine the appropriate level of staffed beds. Beds refers to the number of beds, cribs, and pediatric bassinets regularly maintained (set up and staffed for use) for inpatients. In 1998, LAMC staffed 47 acute care beds. The median for small-community hospitals was 37.5 and for western small-community hospitals 27. LAMC ranked 30<sup>th</sup> out of a sample of 98 hospitals. LAMC was above the median for both the total sample and for the western subset.

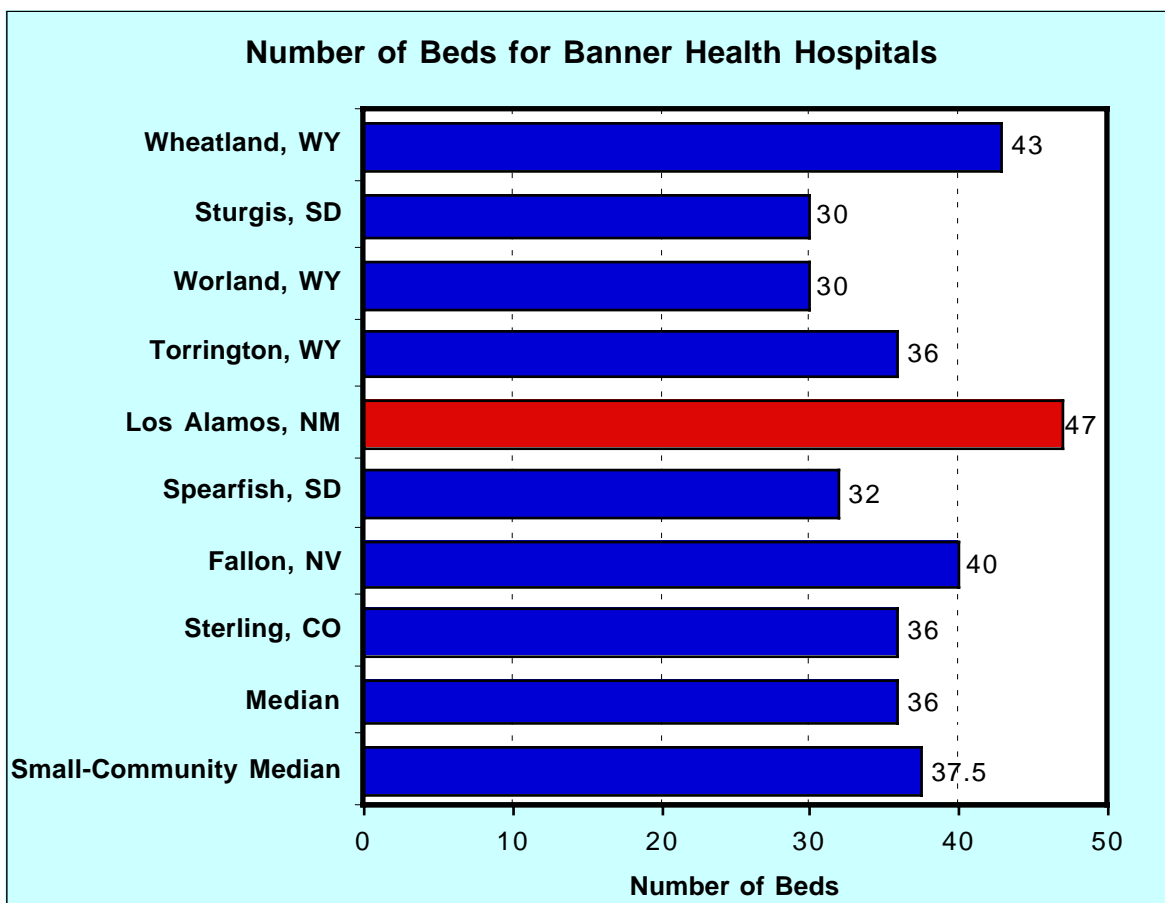


#### **Small-Community Hospitals: Acute Care versus Nursing Home Beds**

LAMC is normal in the types of beds it provides. Los Alamos Medical Center staffs only acute care beds. Seventy-three percent of the small-community hospitals staff only acute care beds. Only twenty-seven percent of the 100 hospitals staff both acute care and nursing care beds. As the Los Alamos population ages, perhaps nursing care beds could be incorporated at LAMC since Banner Health System has expertise in nursing care. Currently Sombrillo, the only nursing care bed service in Los Alamos, is planning to expand this capability.

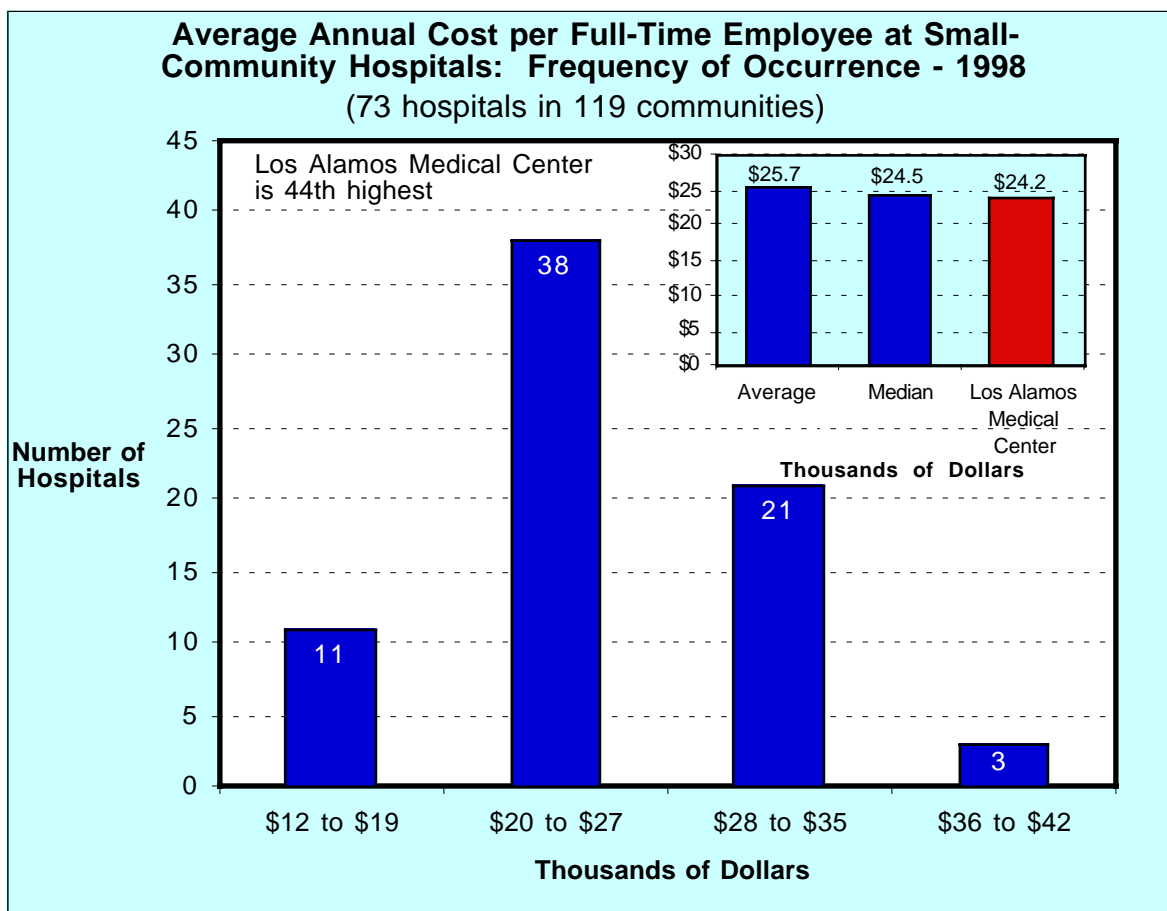
**Sombrillo Nursing and Rehabilitation Center – Los Alamos, NM**

Sombrillo Nursing and Rehabilitation Center is a 64-bed, long-term care facility. Sombrillo is a locally owned, nonprofit corporation consisting of board members and membership committee members from the local retirement community. It is managed by Life Perspectives, a for-profit organization, out of Albuquerque. Sombrillo opened its doors in December 1979 and currently has a 100% occupancy rate. The Center has a staff of 70 employees. The majority of Sombrillo revenue comes from private payment or Medicaid. Currently, long-term care insurance is not a major source of revenue because most occupants come from the generation prior to the development of long-term care insurance and did not have the opportunity to obtain it.



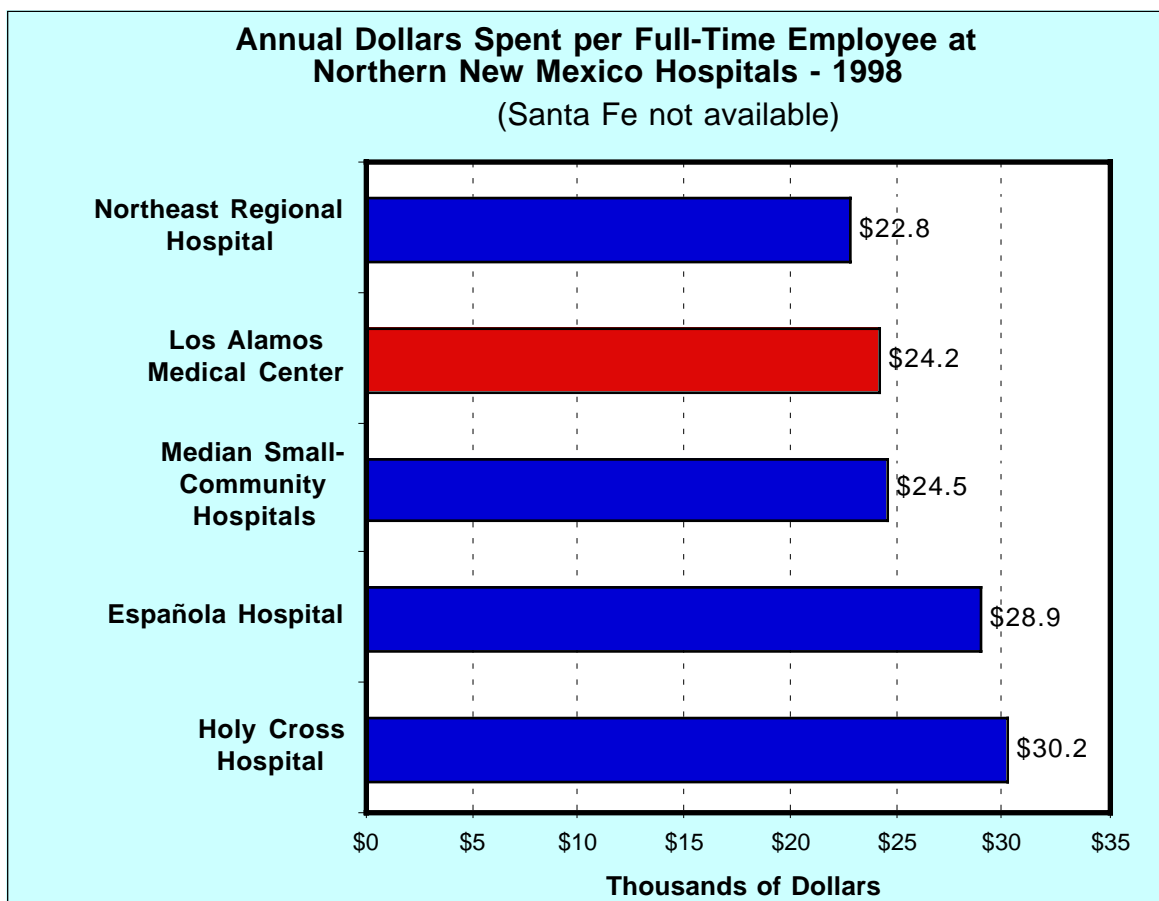
#### Number of Beds for Banner Health Hospitals

When compared to Banner Health System hospitals in the same bed capacity grouping, LAMC has the highest number of staffed beds. These Banner Health System hospitals are considered comparable to LAMC based on the number of beds and/or size of the community.



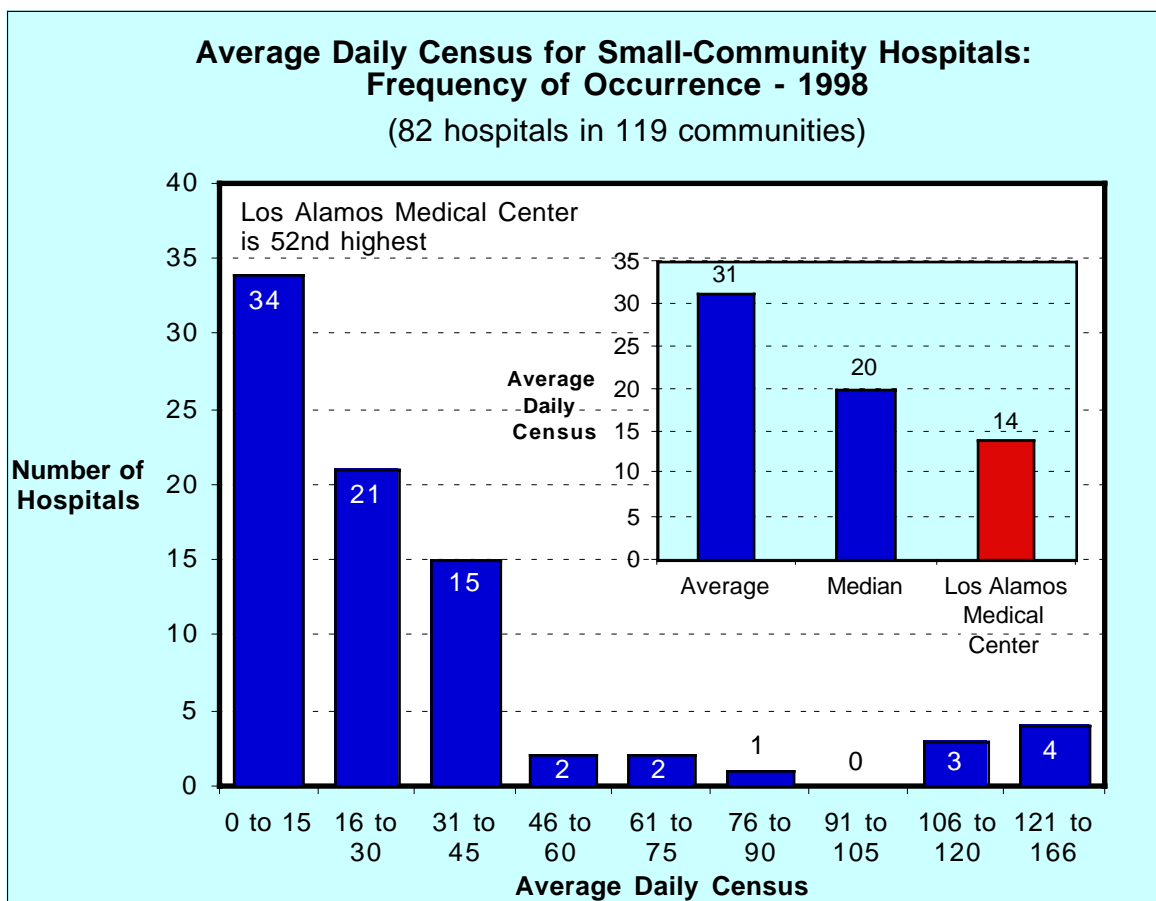
**Average Annual Cost per Full-Time Employee at Small-Community Hospitals: Frequency of Occurrence – 1998**

LAMC is normal in average annual amount spent per full-time employee (FTE) spending a little less than many hospitals. In 1998, the average annual amount spent per FTE by LAMC was \$24,230. The median for small-community hospitals was \$24,510 and for western small-community hospitals \$28,809. LAMC ranked 44<sup>th</sup> out of a sample of 73 hospitals. LAMC was below the median for the total sample and substantially below the median for the western subset.



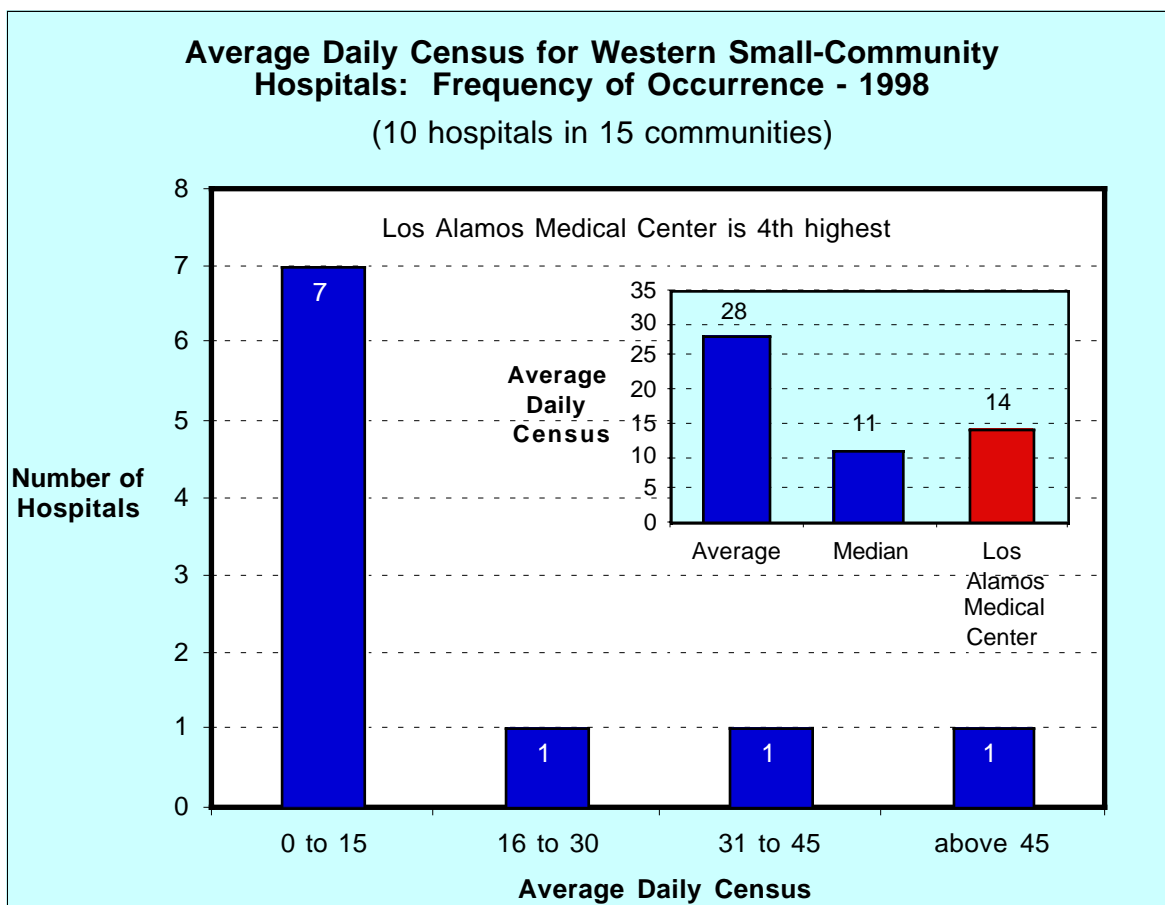
#### **Annual Dollars Spent per Full-Time Employee at Northern New Mexico Hospitals – 1998**

LAMC spent less on payroll expenses than other northern New Mexico hospitals. The 1998 LAMC average annual cost per full-time employee was less than both the Española Hospital and Holy Cross Hospital, and only slightly higher than Northeast Regional Hospital in Las Vegas, New Mexico.



### Average Daily Census for Small-Community Hospitals: Frequency of Occurrence – 1998

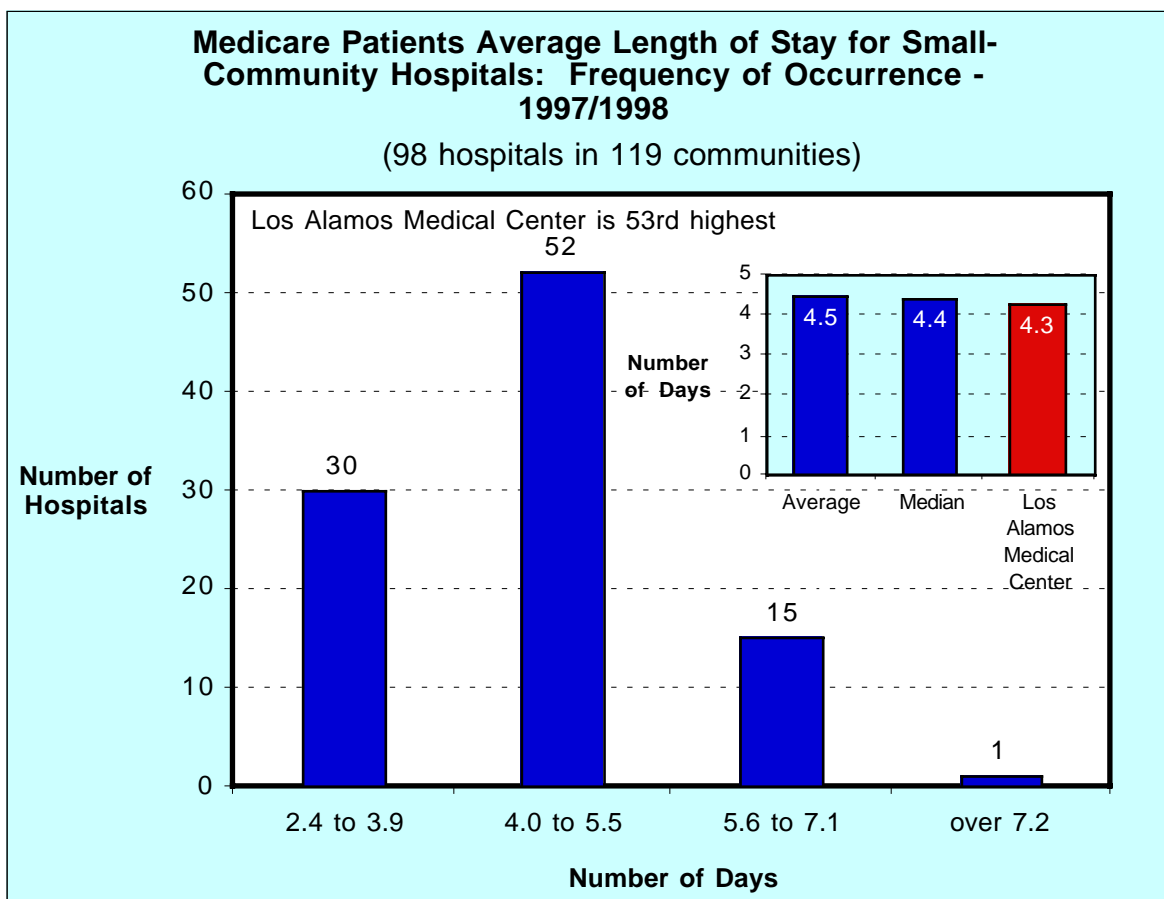
LAMC is in the low to normal range for average daily census. Census refers to the average number of inpatients receiving care at the hospital each day during the 12-month reporting period not including newborns. In 1998, the average daily census for LAMC was 14. The median for small-community hospitals was 20. LAMC ranked 52<sup>nd</sup> out of a sample of 82 hospitals. LAMC was below the median for the total sample. When the below median LAMC daily census is considered with the above median number of staffed beds (47), the number of staffed beds is higher than normal.



**Average Daily Census for Western Small-Community Hospitals: Frequency of Occurrence – 1998**

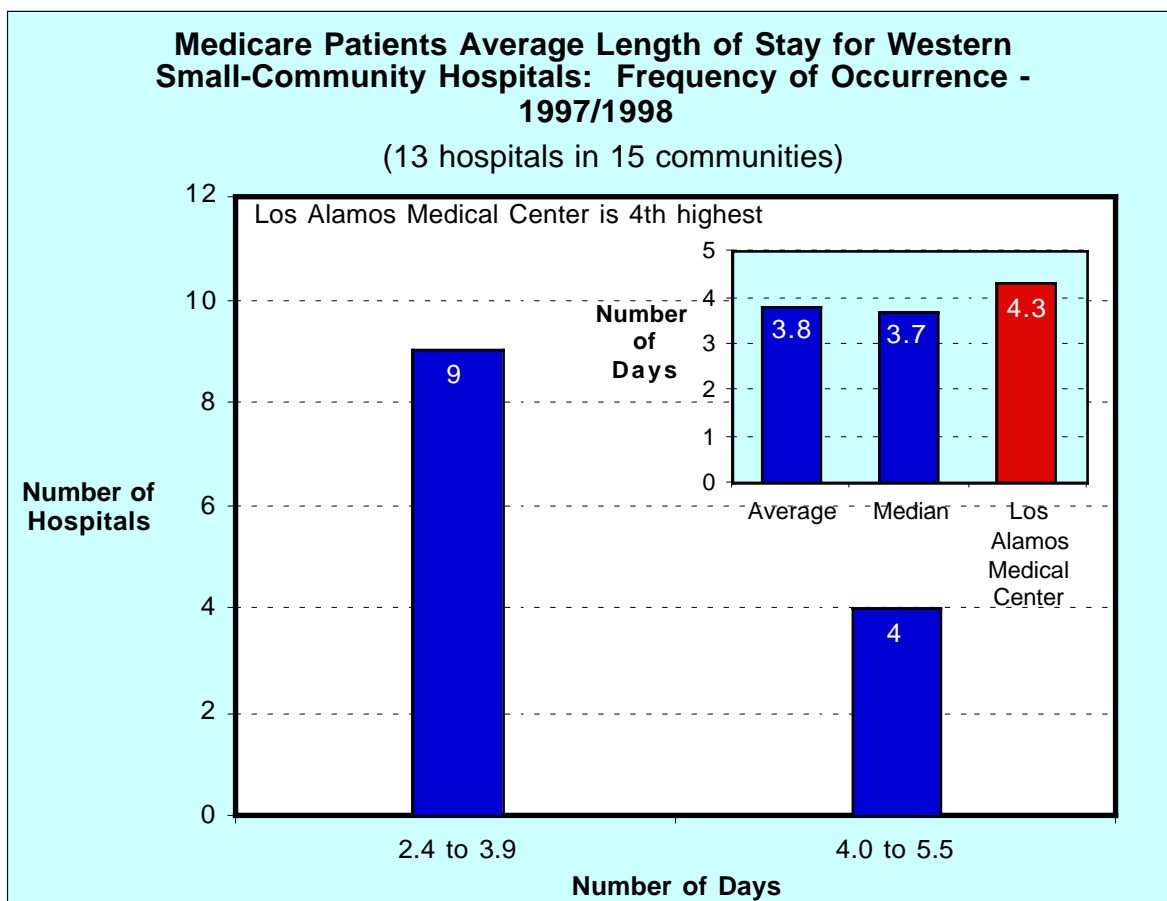
LAMC was above the median for the western subset. In 1998, the average daily census for LAMC was 14. The median for the western small-community hospital subset was 10.5. LAMC ranked 4<sup>th</sup> out of a sample of 10 hospitals.





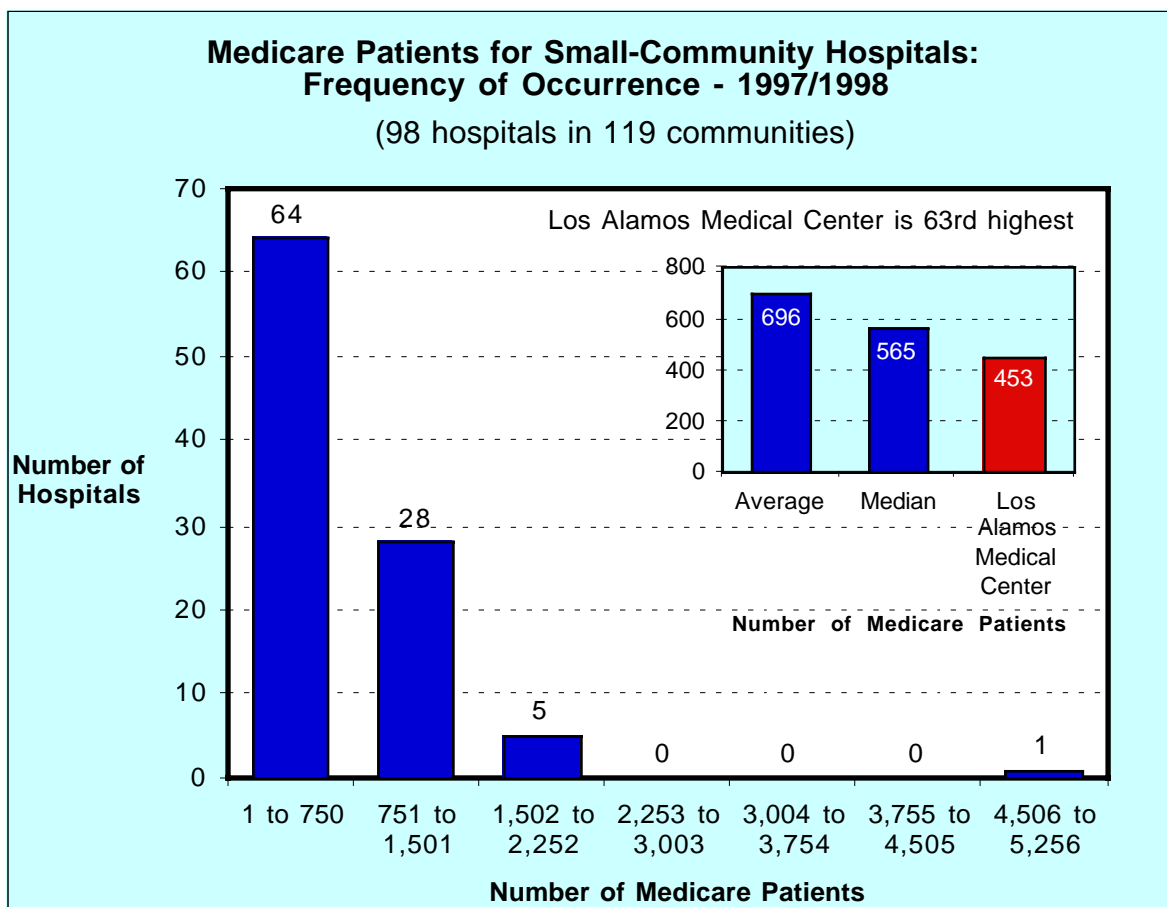
**Medicare Patients Average Length of Stay for Small-Community Hospitals: Frequency of Occurrence – 1997/1998**

Average length of stay (ALOS) is typically calculated by dividing the annual number of inpatient days by the annual number of admissions. In 1997/1998, the Medicare ALOS at LAMC was 4.3 days. The median for small-community hospitals was 4.4 days. LAMC ranked 53<sup>rd</sup> out of a sample of 98 hospitals. LAMC was slightly below the median for the total sample. Geographic region, average age of patient, and severity of the patient caseload are important factors in evaluating a hospital's ALOS.



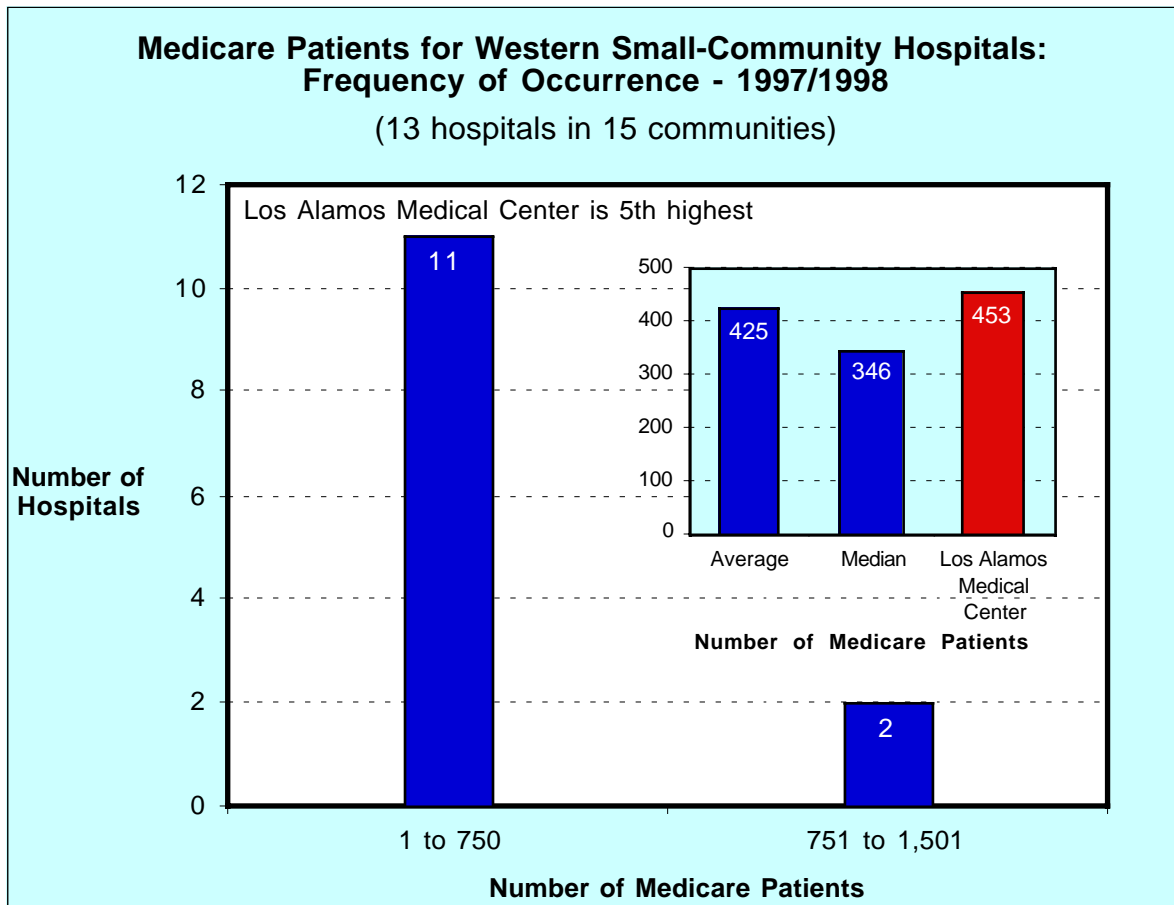
**Medicare Patients Average Length of Stay for Western Small-Community Hospitals: Frequency of Occurrence – 1997/1998**

LAMC was above the median for the western subset. In 1997/1998, the Medicare ALOS at LAMC was 4.3 days. The median for the western small-community hospital subset was 3.7 days. LAMC ranked 4<sup>th</sup> out of a sample of 13 hospitals.



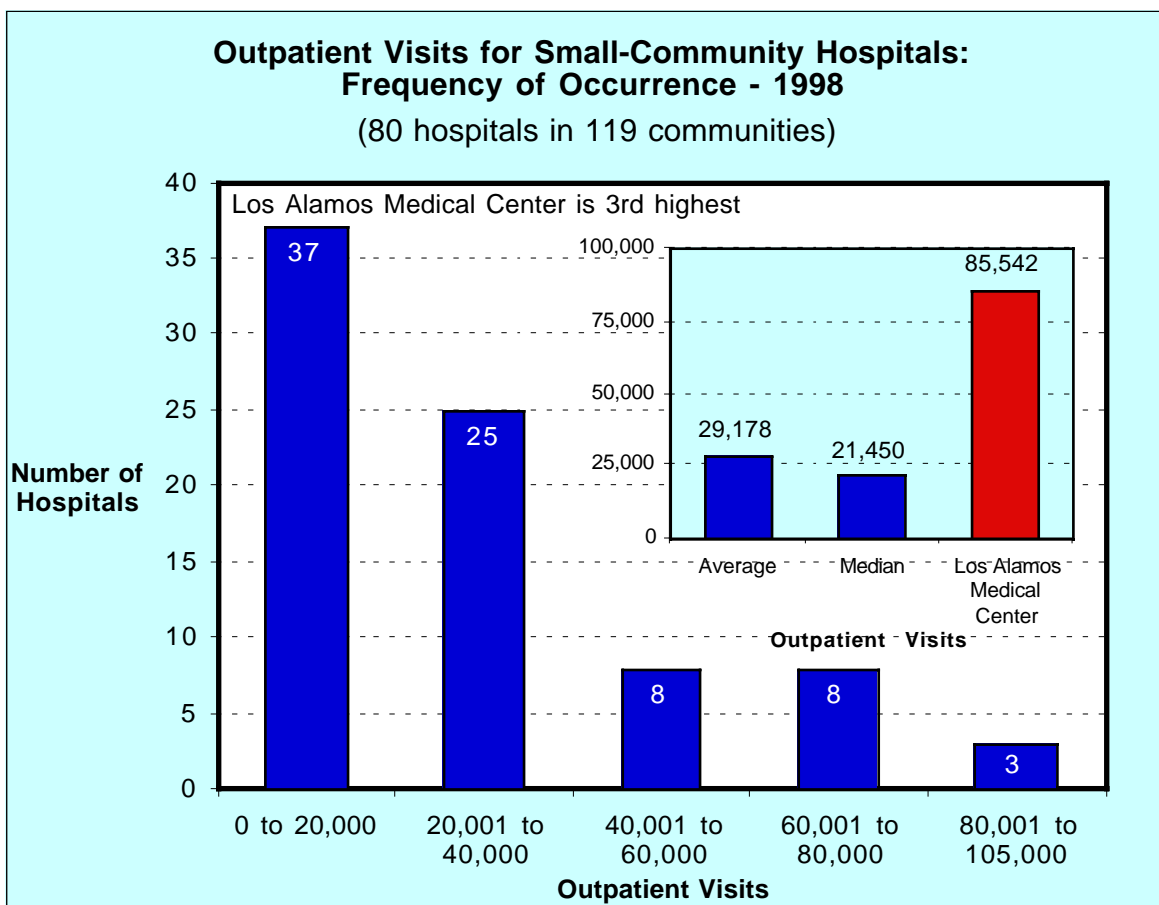
### Medicare Patients for Small-Community Hospitals: Frequency of Occurrence – 1997/1998

The number of Medicare patients at LAMC is on the low side of normal. Medicare patients refer to the number of Medicare inpatients during the 1997/1998 time frame. In 1997/1998, the annual number of Medicare inpatients at LAMC was 453. The median for small-community hospitals was 565. LAMC ranked 63<sup>rd</sup> out of a sample of 98 hospitals. LAMC was below the median for the total sample. Medicare patients often require more specialized treatment than can be provided at small-community hospitals and obtain care from larger hospitals in the nearest large city or metropolitan statistical area. Also, Los Alamos has less Medicare enrollees than surrounding northern New Mexico communities.



**Medicare Patients for Western Small-Community Hospitals: Frequency of Occurrence – 1997/1998**

LAMC was above the median for the western subset. In 1997/1998, the annual number of Medicare inpatients at LAMC was 453. The median for the western small-community hospital subset was 346. LAMC ranked 5<sup>th</sup> out of a sample of 13 hospitals.

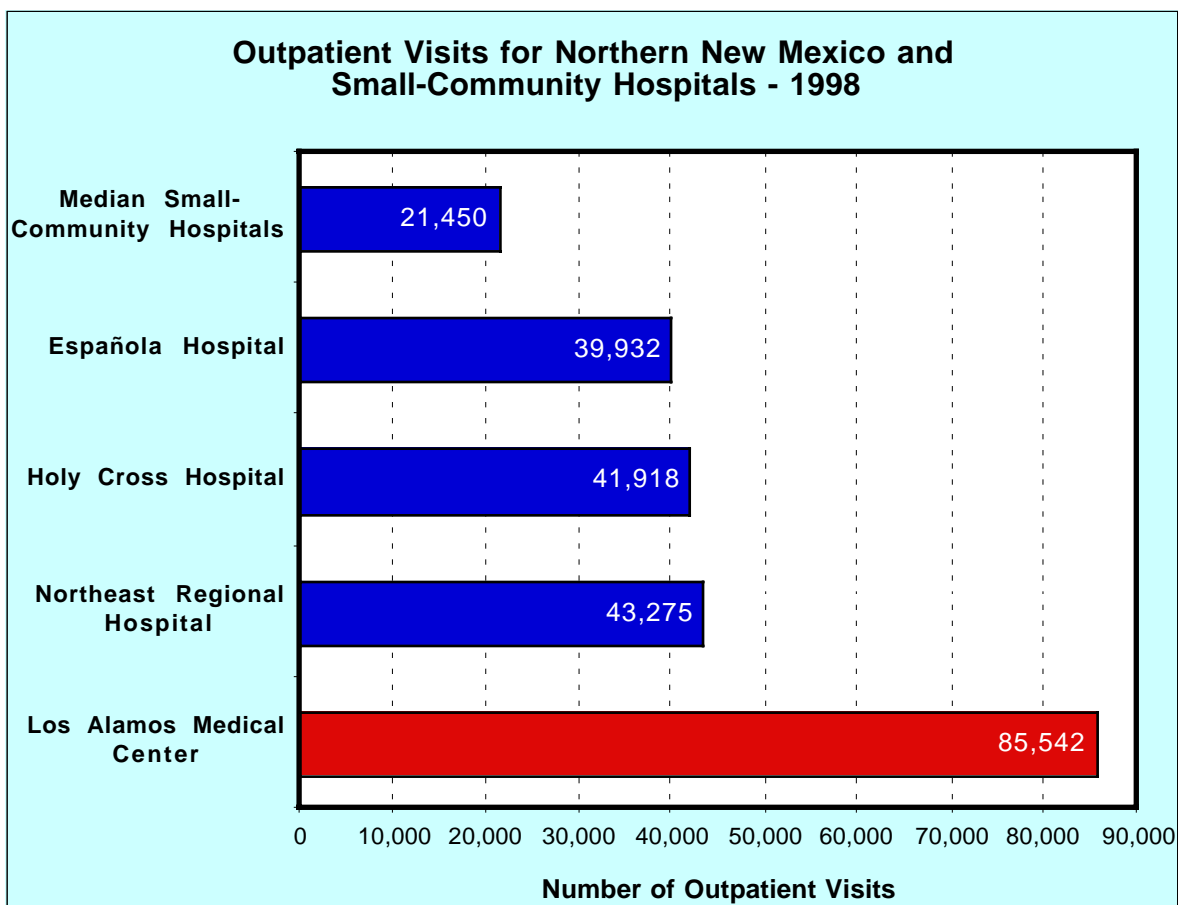


### Outpatient Visits for Small-Community Hospitals: Frequency of Occurrence – 1998

LAMC is normal in many important ways when compared to other communities similar in population size. However, LAMC has unique characteristics indicating it is doing well financially. LAMC has a comparatively high number of outpatient visits. LAMC average Medicare charges and case mix index are also comparatively high. LAMC has a high financial margin and high total expenses. However, in a major category of operation expenses (labor), LAMC is comparatively low in the ratio of payroll to total expenses and the ratio of Medicare inpatients to admissions.

Outpatient services constitute a substantial portion of LAMC's business. Outpatient visits refer to a visit by a patient who is not lodged in the hospital while receiving medical, dental, or other services. Each appearance of an outpatient in each unit constitutes one visit regardless of the number of diagnostic and/or therapeutic treatments that a patient receives.

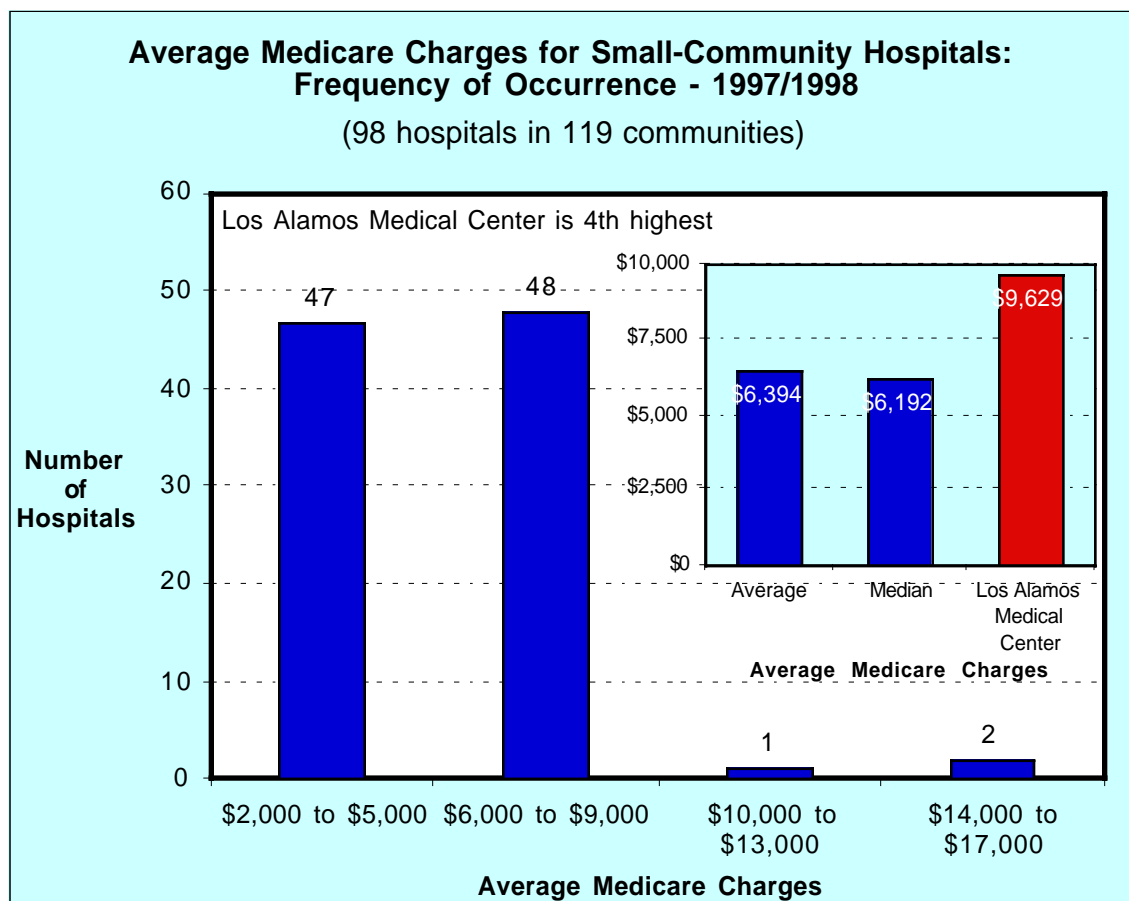
In 1998, the number of outpatient visits at LAMC was 85,542. The median for small-community hospitals was 21,450 and 24,108 for western small-community hospitals. LAMC ranked 3<sup>rd</sup> out of a sample of 80 hospitals.



#### **Outpatient Visits for Northern New Mexico and Small-Community Hospitals – 1998**

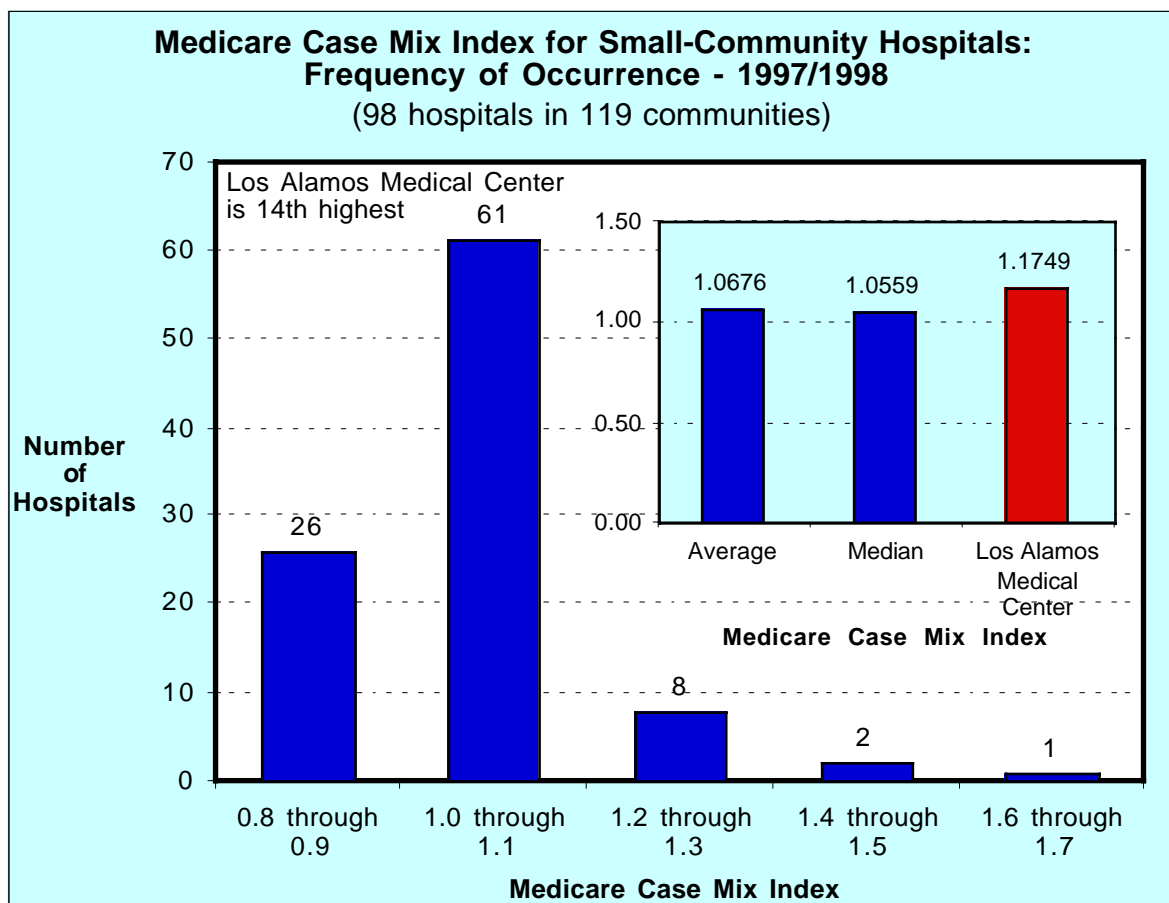
Outpatient visits at LAMC are well over three times the median for the total sample and for the western subset. When compared to northern New Mexico region hospitals, the number of outpatient visits at LAMC is almost double.

The majority of physicians in Los Alamos have their offices within the LAMC buildings where most of the diagnostic equipment is located. Aspen Medical Center has offices in the downtown area, where they utilize their bone densitometry equipment, x-ray, and laboratory services.



#### **Average Medicare Charges for Small-Community Hospitals: Frequency of Occurrence – 1997/1998**

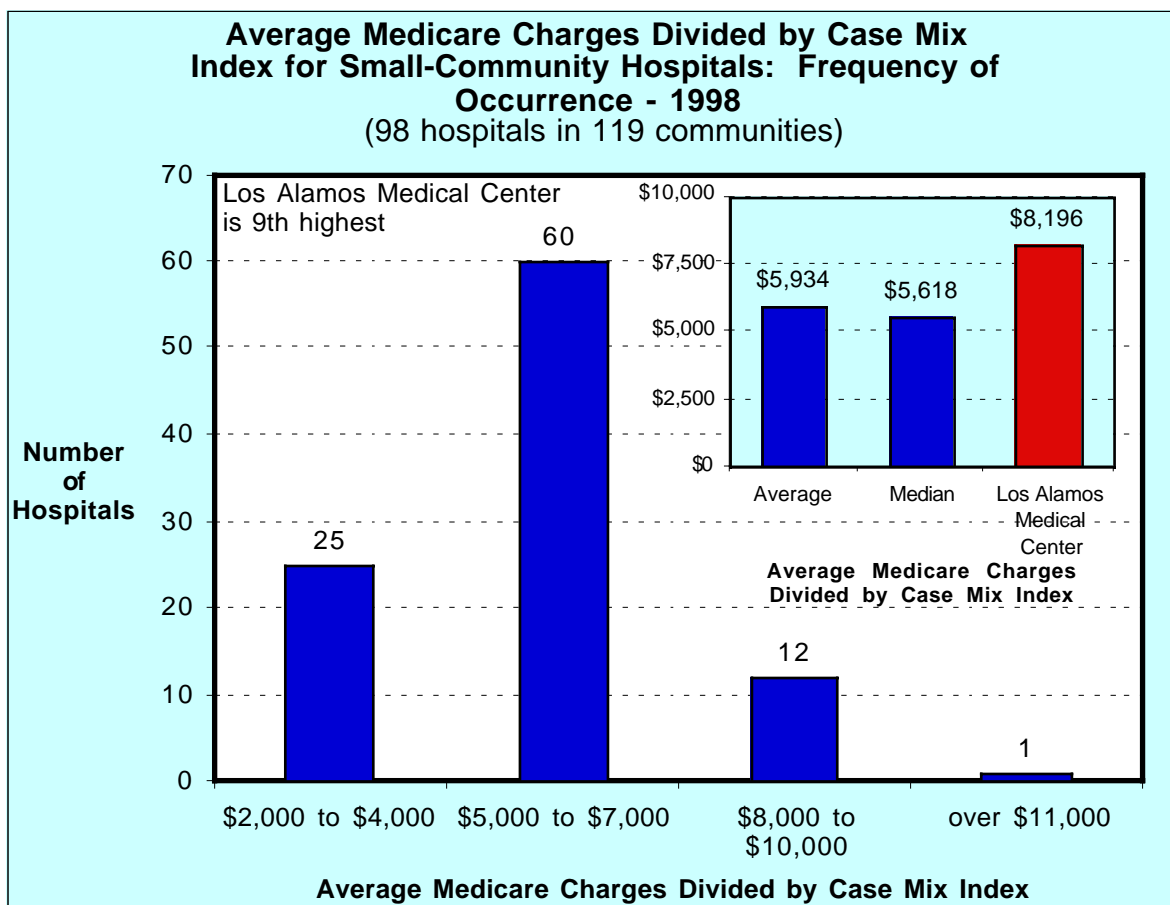
LAMC is well above the median for Medicare charges. Average Medicare charges include inpatient services as defined by the diagnostic related group categories and exclude outpatient services, physician fees, organ procurement, and durable medical equipment. In 1997/1998, the average Medicare charges at LAMC were \$9,629. The median for small-community hospitals was \$6,192 and for western small-community hospitals \$7,326. LAMC ranked 4<sup>th</sup> out of a sample of 98 hospitals.



#### Medicare Case Mix Index for Small-Community Hospitals: Frequency of Occurrence – 1997/1998

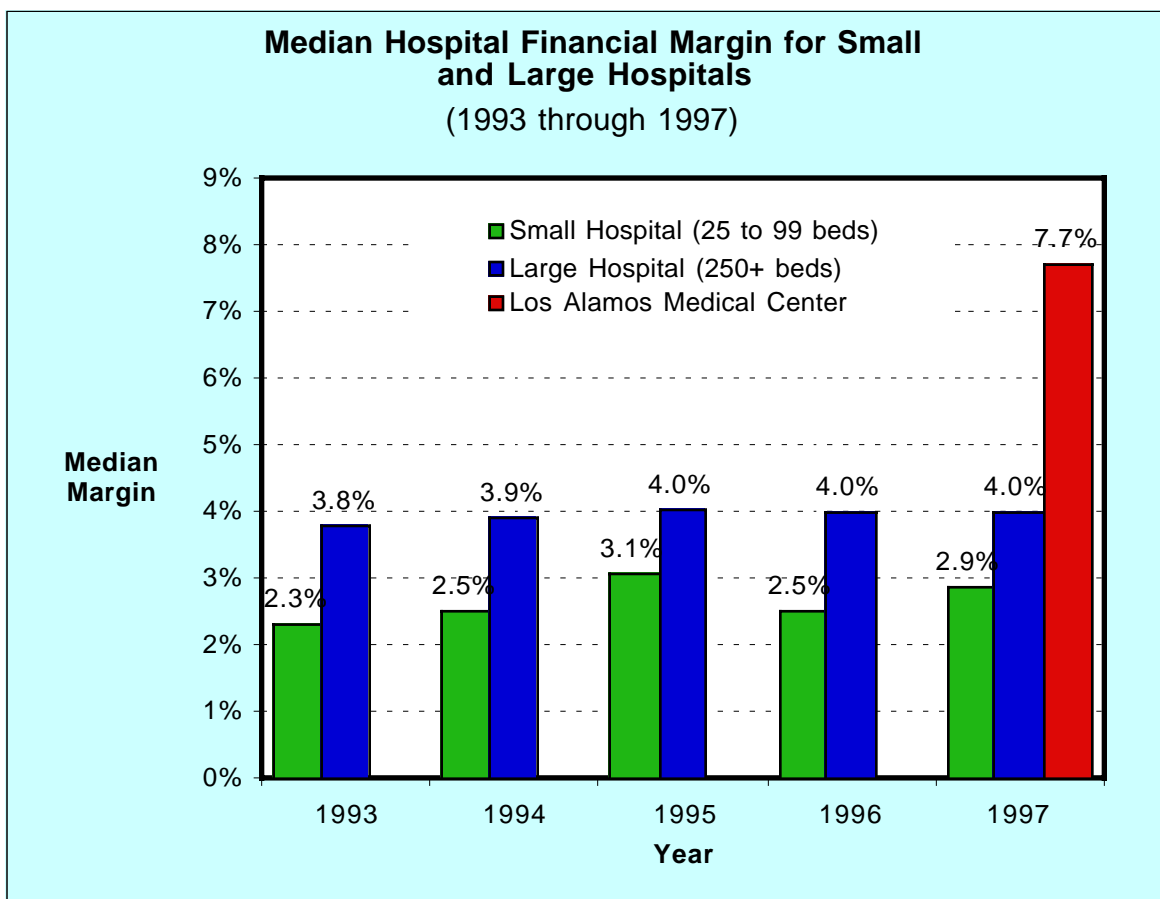
The LAMC Medicare case mix index is comparatively high. Case mix index or case weight index is a measurement of the relative severity for a population of patients. In 1997/1998, the average Medicare case mix index at LAMC was 1.17. The median for small-community hospitals was 1.06 and for western small-community hospitals 1.07. LAMC ranked 14<sup>th</sup> out of a sample of 98 hospitals. Although Medicare case mix index is comparatively high, case weight index for LANL health care plan members has been reported to be comparatively low.





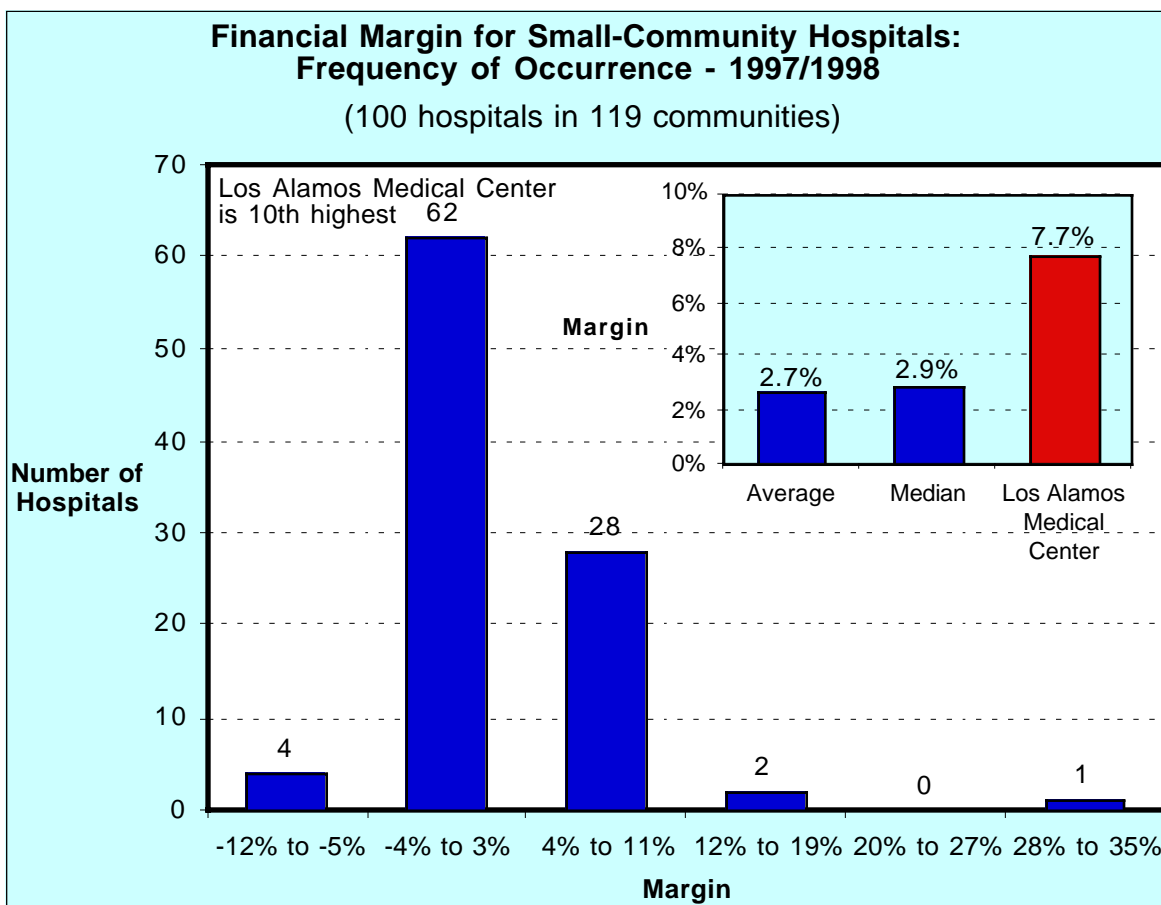
**Average Medicare Charges Divided by Case Mix Index for Small-Community Hospitals: Frequency of Occurrence – 1998**

When case mix index or severity of caseload is considered, LAMC continues to have high Medicare charges for inpatient services. To fully evaluate Medicare charges, the average Medicare charges were divided by the case mix index. In 1997/1998, average Medicare charges divided by case mix at LAMC were \$8,196. The median for small-community hospitals was \$5,618 and for western small-community hospitals \$6,612. LAMC ranked 9<sup>th</sup> out of a sample of 98 hospitals.



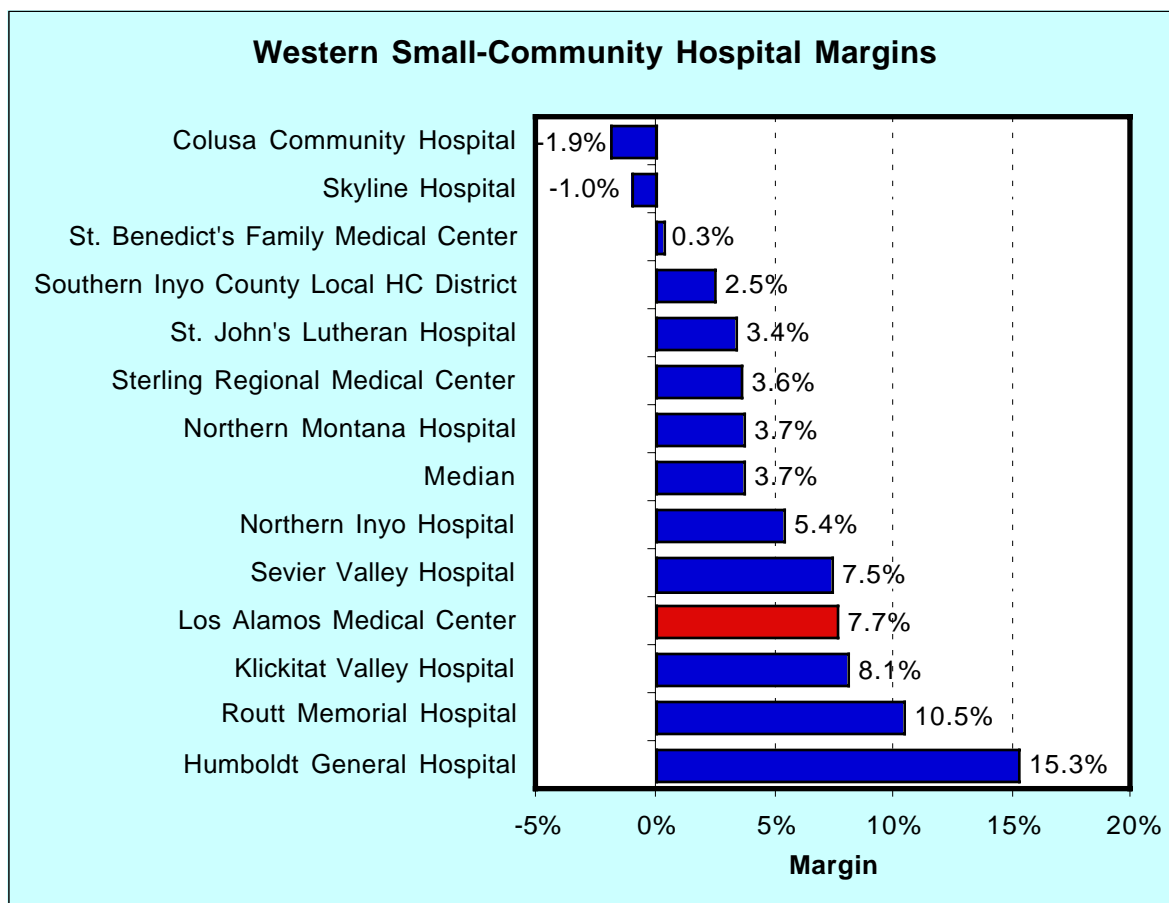
### Median Hospital Financial Margin for Small and Large Hospitals

LAMC has substantially higher financial margins than the national norm. Financial margin is a measure of how well a hospital is doing relative to total expenses and total revenue. From 1993 through 1997, small hospitals (25 to 99 beds) had margins in the range of 2% to 3%. Large hospitals (250+ beds) had margins in the range of 3.8% to 4%. In 1997/1998, LAMC had a margin of 7.7%.



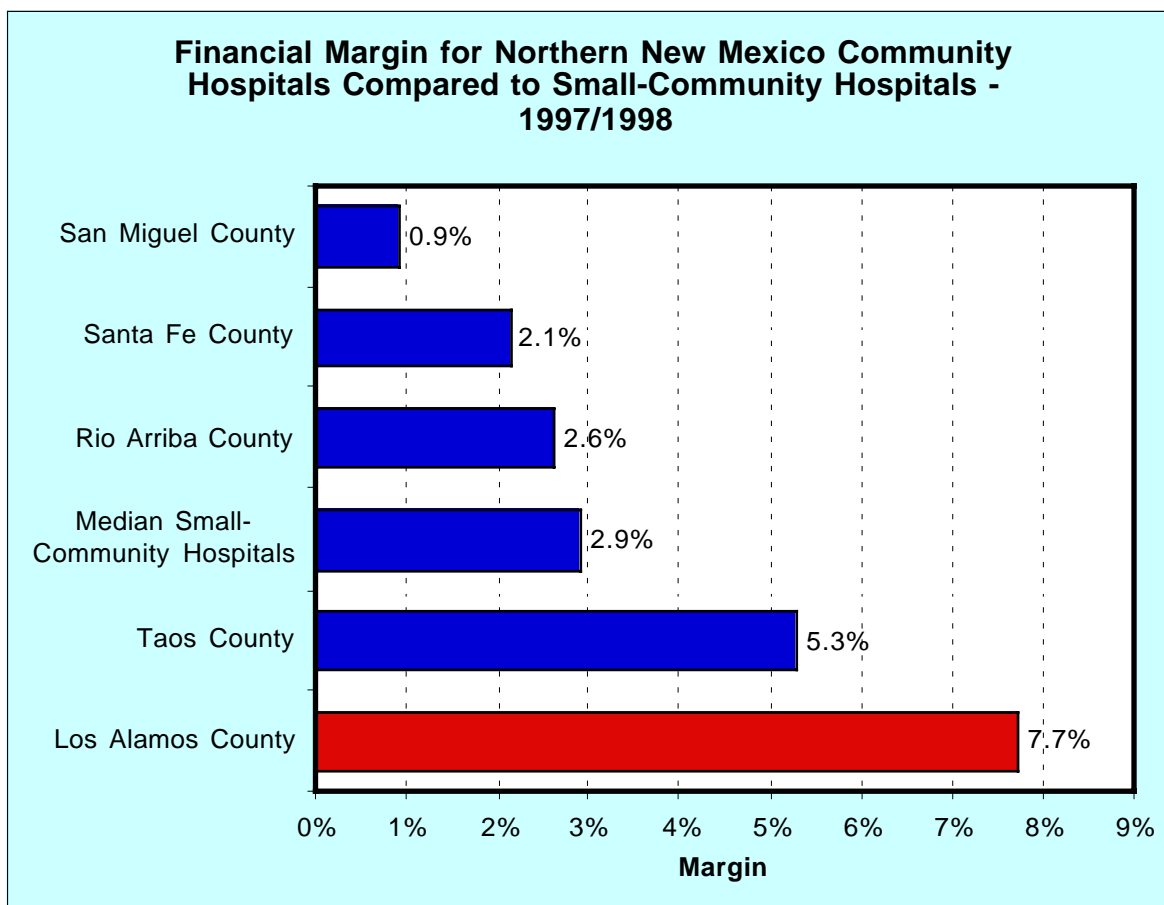
#### Financial Margin for Small-Community Hospitals: Frequency of Occurrence – 1997/1998

LAMC is doing better financially than most hospitals. In 1997/1998, the margin at LAMC was 7.7%. The median for small-community hospitals was 2.9% and for western small-community hospitals 3.66%. LAMC ranked 10<sup>th</sup> out of a sample of 100 hospitals. LAMC was well above the median for the total sample and the western subset.



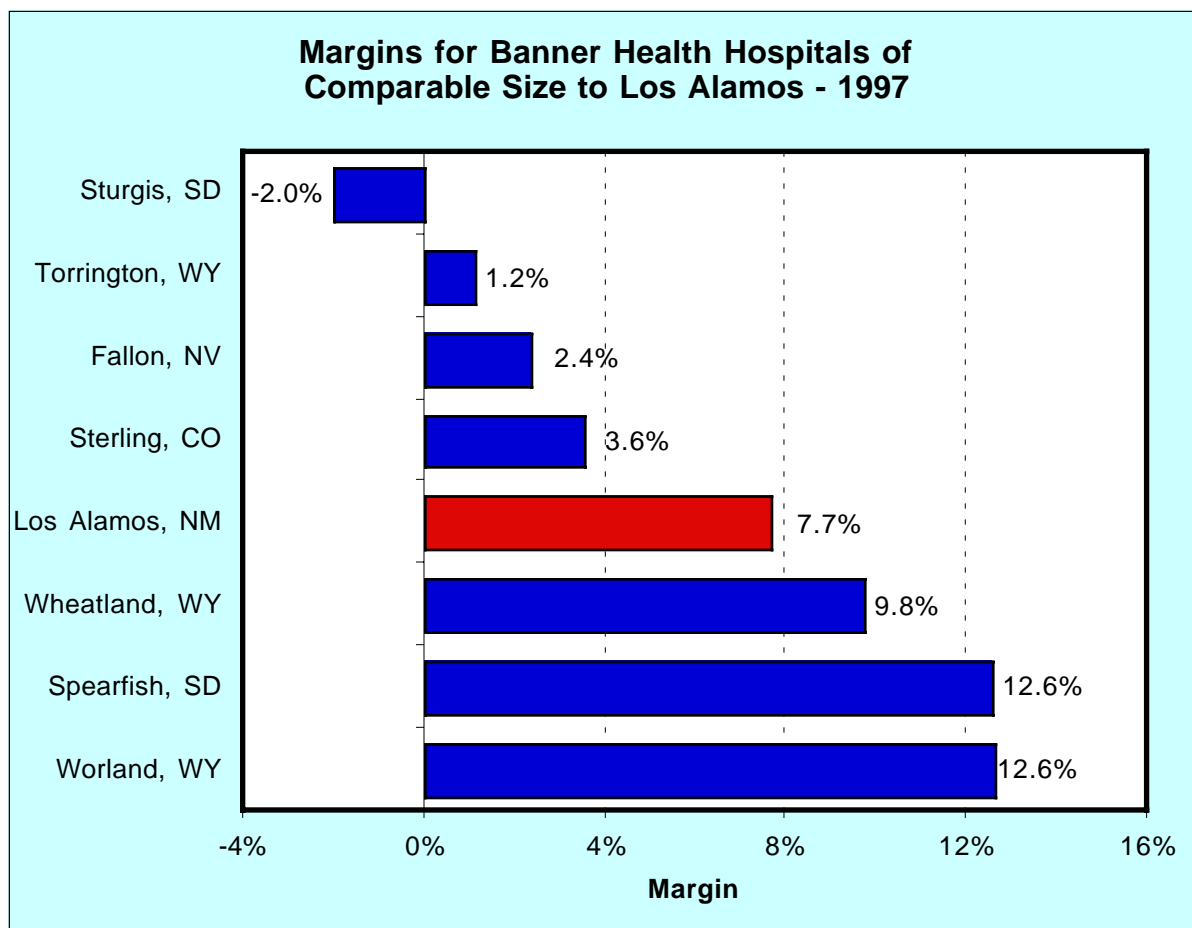
### Western Small-Community Hospital Margins

When LAMC margin is compared to the western subset, it continues to demonstrate a healthy financial margin. The median for western small-community hospitals was 3.66%. The two hospitals with the highest margins, Humboldt General Hospital at 15.27% and Routt Memorial Hospital at 10.45% are located in isolated areas with well-insured residents. A viable market is important in hospital sustainability. Two of the western hospitals with low to negative margins are in counties that have two hospitals: -0.99% at Skyline Hospital in Klickitat County and 2.45% at Southern Inyo County Local Health Care District in Inyo County.



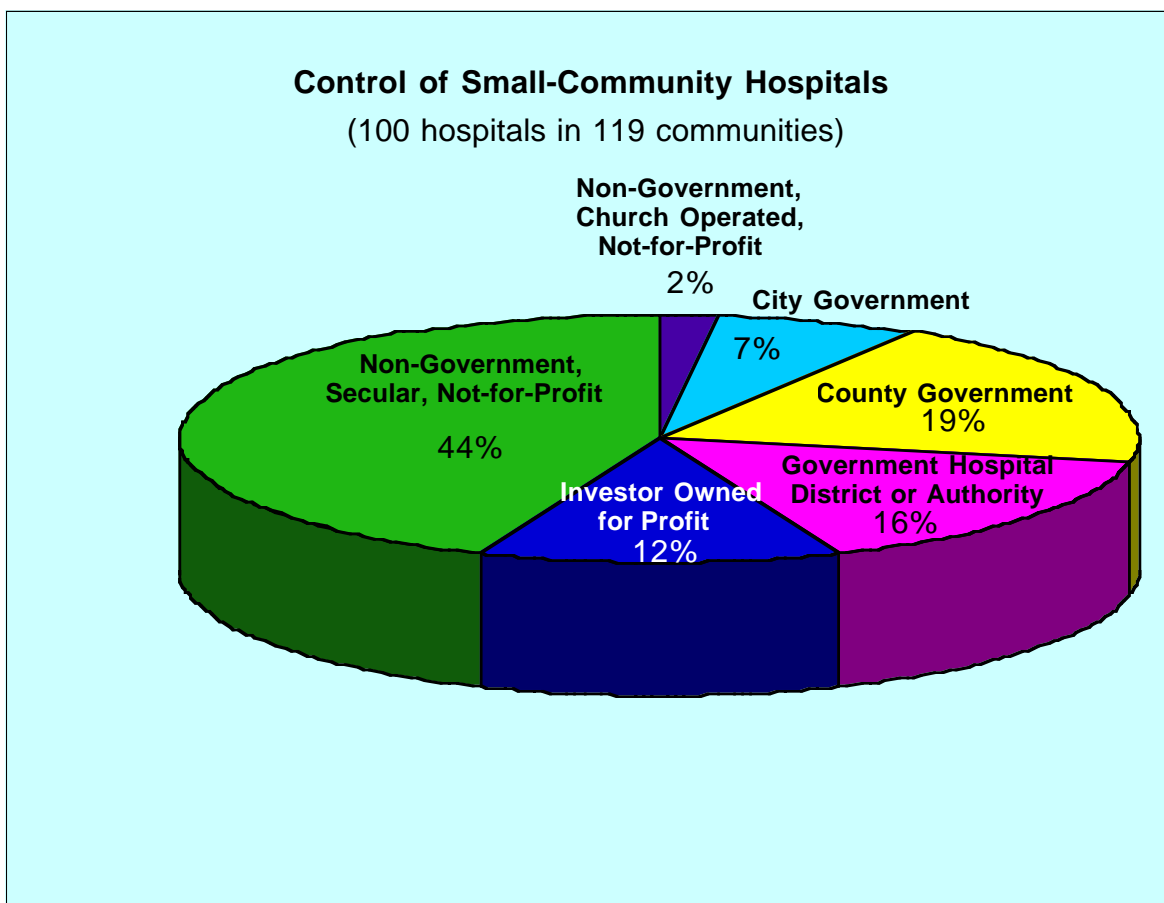
**Financial Margin for Northern New Mexico Community Hospitals Compared to Small-Community Hospitals – 1997/1998**

LAMC has a much higher financial margin compared to other hospitals in northern New Mexico communities. Holy Cross Hospital in Taos, managed by Quorum Health Services, is also doing relatively well. LAMC administration stated that physician and hospital services in Taos and Rio Arriba have assumed a small portion of LAMC's market share over the last few years. LAMC surgeons once supported patients throughout northern New Mexico.



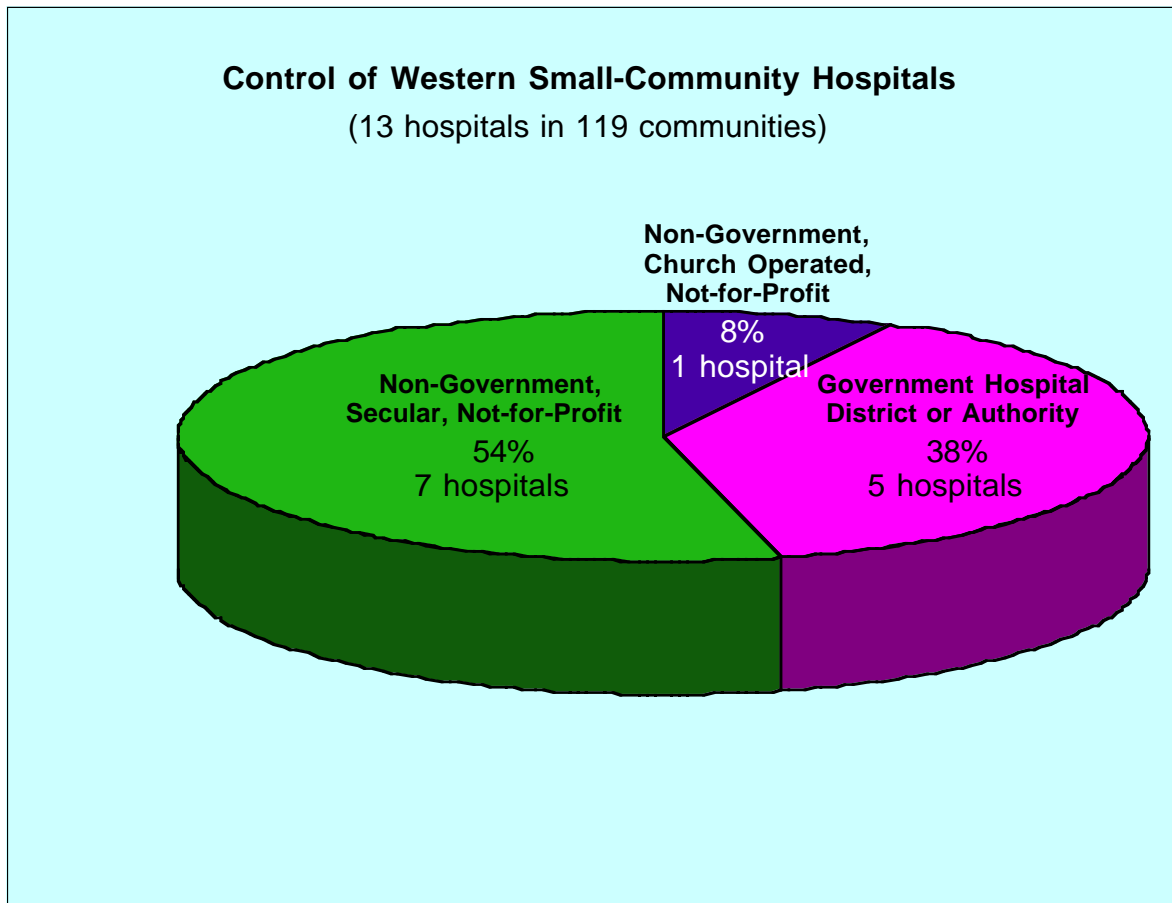
#### **Margins for Banner Health Hospitals of Comparable Size to Los Alamos – 1997**

Most Banner Health System hospitals comparable in size to LAMC have healthy margins. The average margin for small-community hospitals was between 2% to 3%. Two Banner Health System hospitals in the data set have margins lower than the national average: Torrington, Wyoming (1% margin) and Sturgis, South Dakota (-2% margin). One Banner Health System hospital in Fallon, Nevada, has a margin within the national average range. The remaining 5 hospitals in the data set including LAMC have above average margins of greater than 3%.



### Control of Small-Community Hospitals

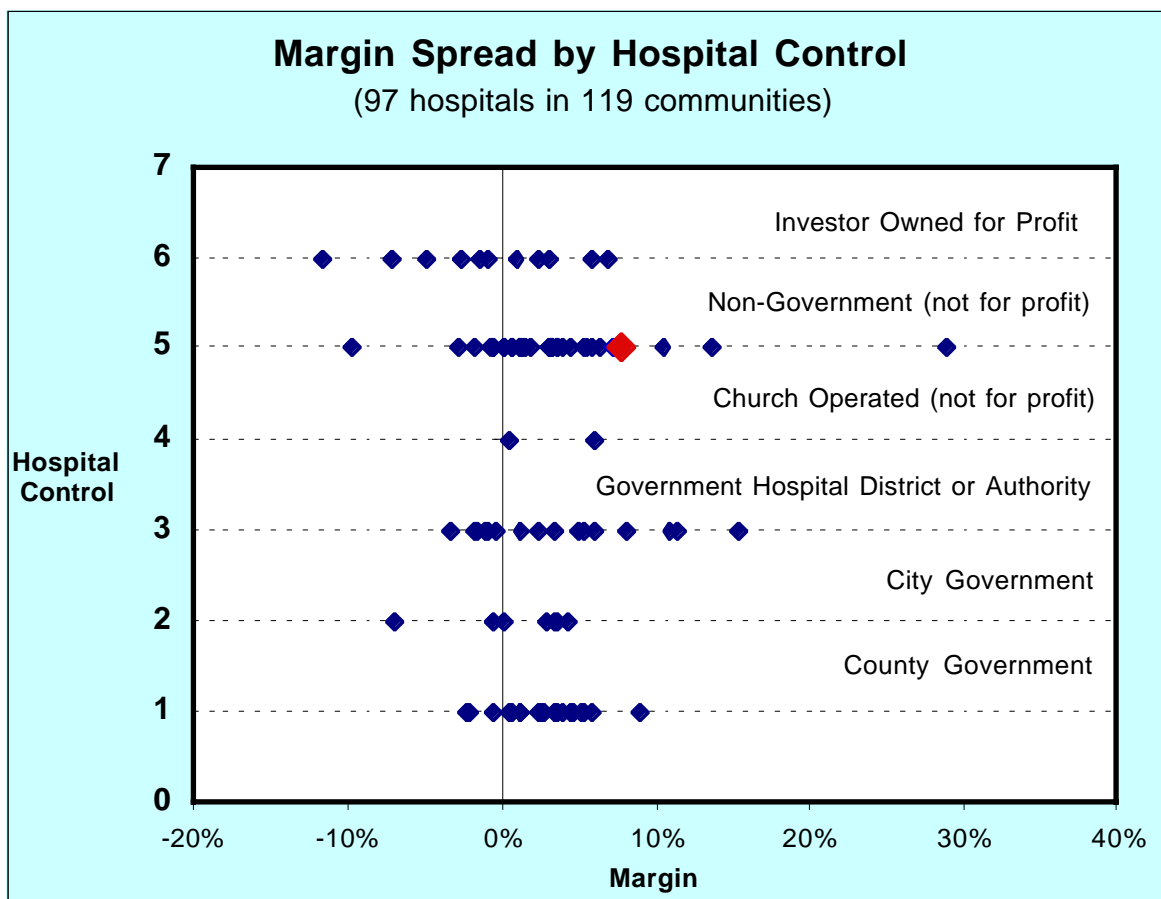
The most common hospital classification category for community hospitals in the nation is non-Government not-for-profit. Los Alamos Medical Center falls in this category by being owned and operated by Banner Health System, a non-Government not-for-profit organization. In 1963, Los Alamos County sold the hospital to Lutheran Health (now Banner Health) for \$1. Forty-six percent of 100 hospitals are in the non-Government, not-for-profit category with 2% church operated and 44% operated by a secular, not-for-profit organization. Forty-two percent of 100 hospitals are in the government, nonfederal category with 7% controlled by city government, 19% by county government, and 16% by a government hospital district or authority. Twelve percent of 100 small-community hospitals are in the investor owned for-profit category.



### Control of Western Small-Community Hospitals

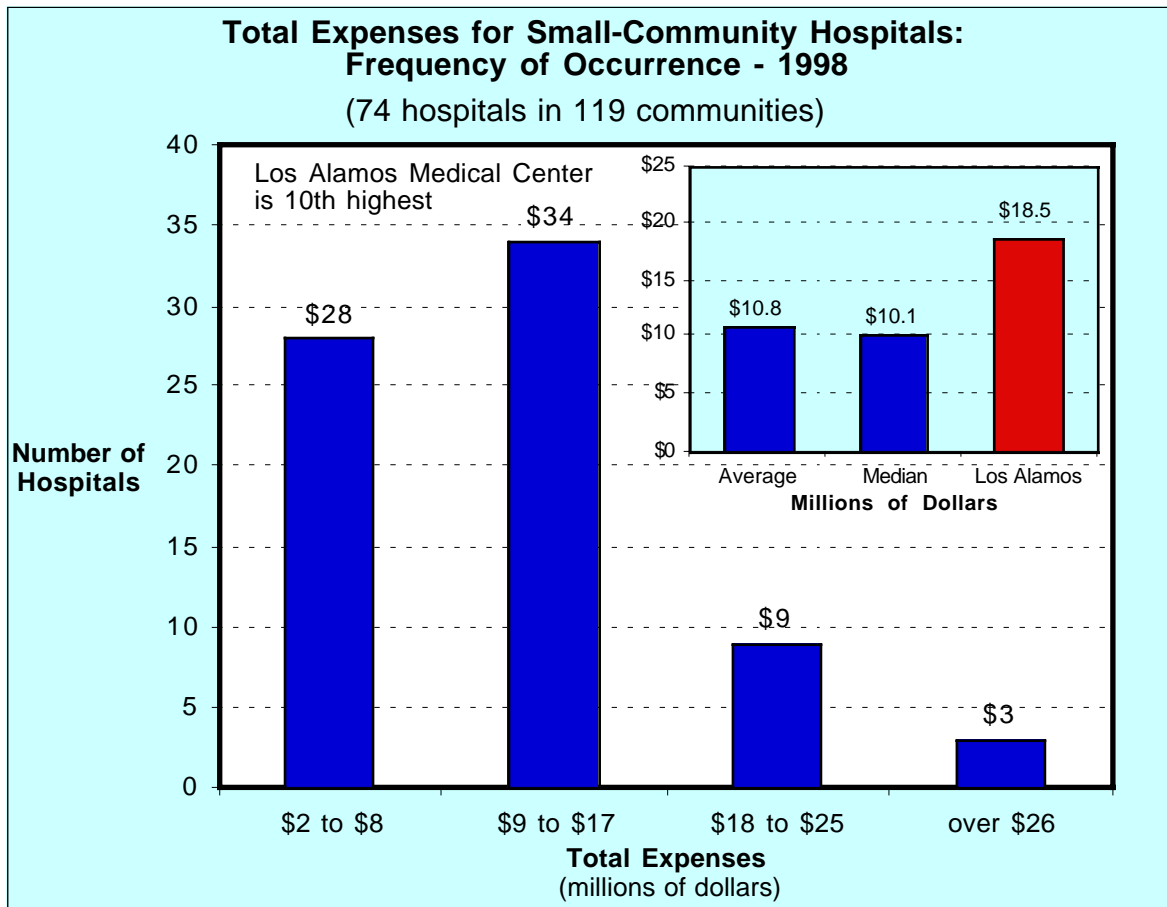
Non-Government not-for-profit is the most common control for the western subset of hospitals. None of the western small-community hospitals is investor owned by a for-profit organization. It is not uncommon for a government, nonfederally owned hospital to contract management services from a not-for-profit or for-profit organization. This arrangement gives the community more direct control of the management of the hospital but also requires more financial liability and responsibility.





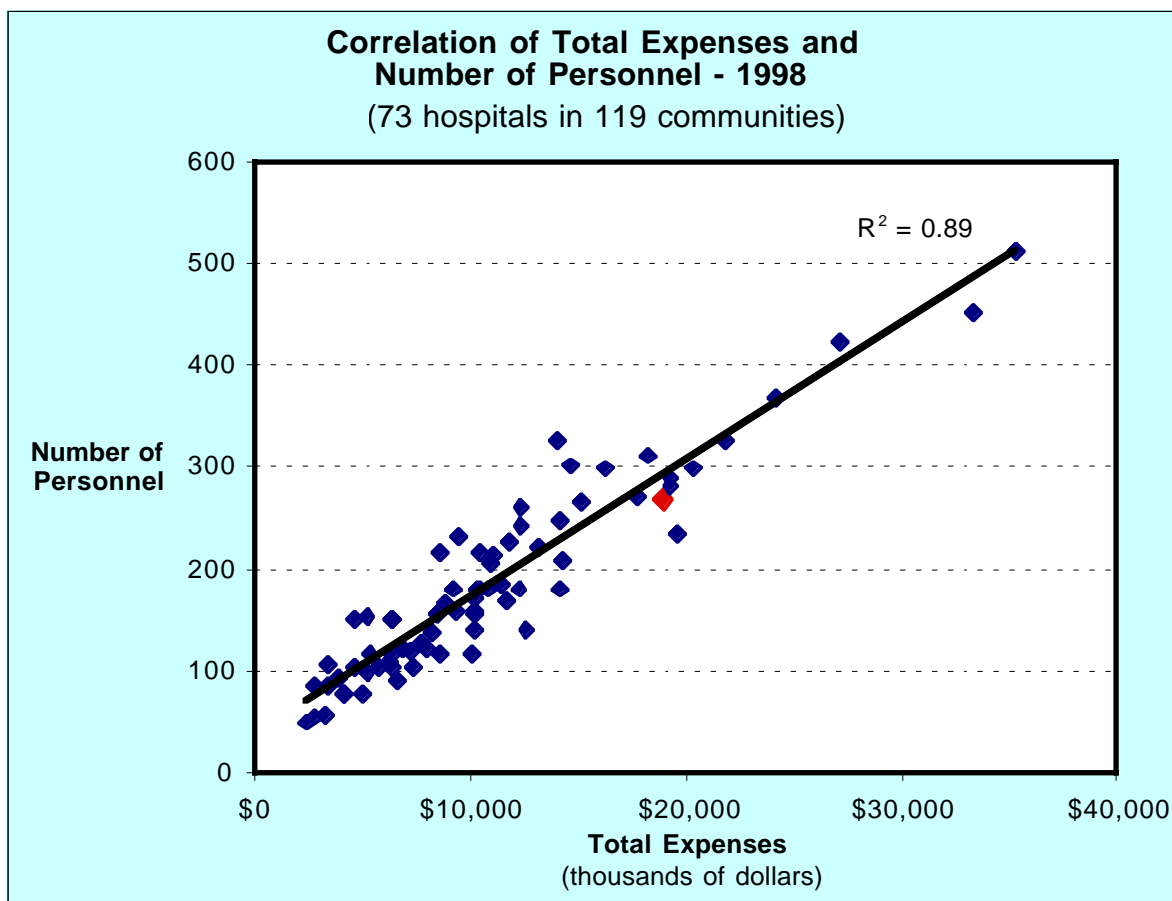
### Margin Spread by Hospital Control

Hospital financial margin is independent of any type of hospital control for small-community hospitals similar in population size to Los Alamos County. When hospital financial margin is evaluated by the type of hospital control, there is a similar spread from negative to positive for all types of arrangements. Los Alamos Medical Center is shown by the red diamond.



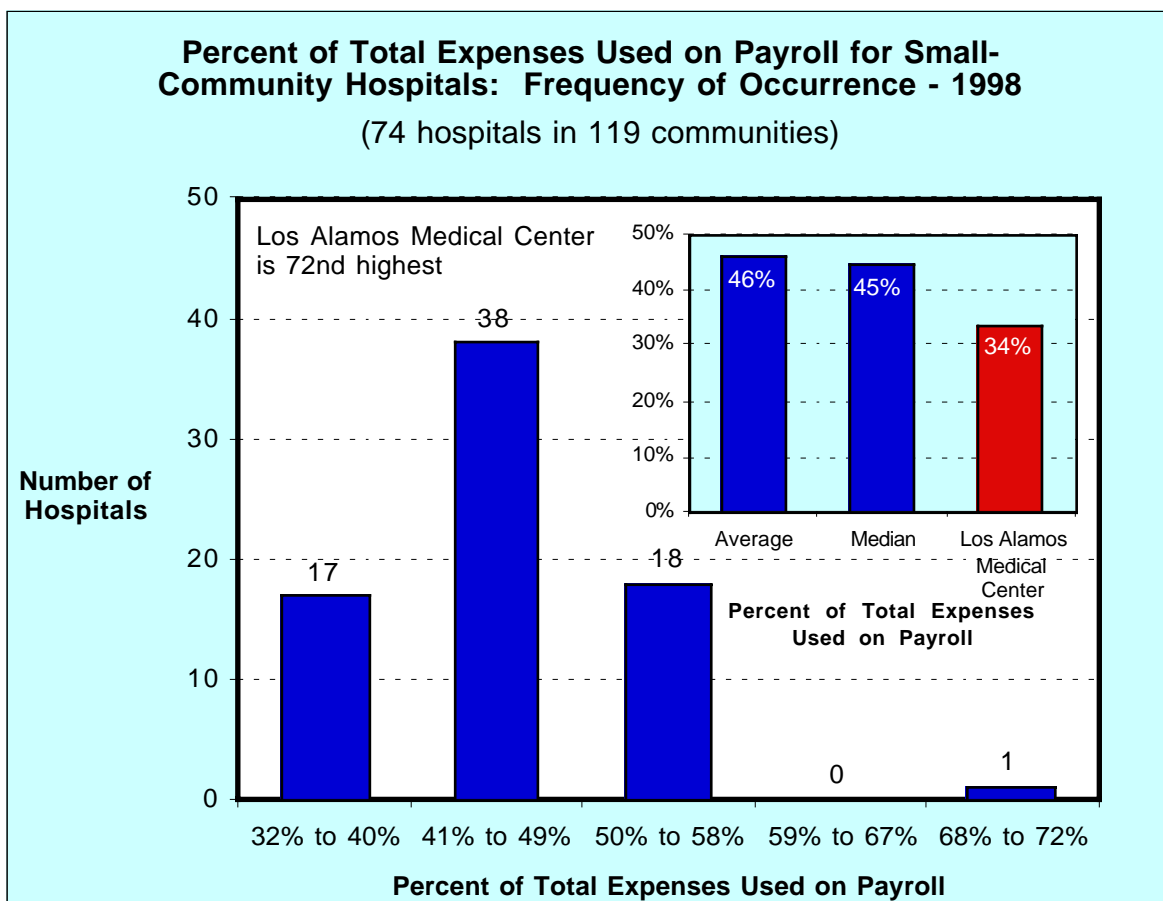
#### Total Expenses for Small-Community Hospitals: Frequency of Occurrence – 1998

In 1998, the total expenses for LAMC were \$18.5 million. The median for small-community hospitals was \$10.1 million and for western small-community hospitals \$10.8 million. LAMC ranked 10<sup>th</sup> out of a sample of 74 hospitals. LAMC has expenses substantially over the median. The high volume of outpatient services may generate added expenses in addition to revenue.



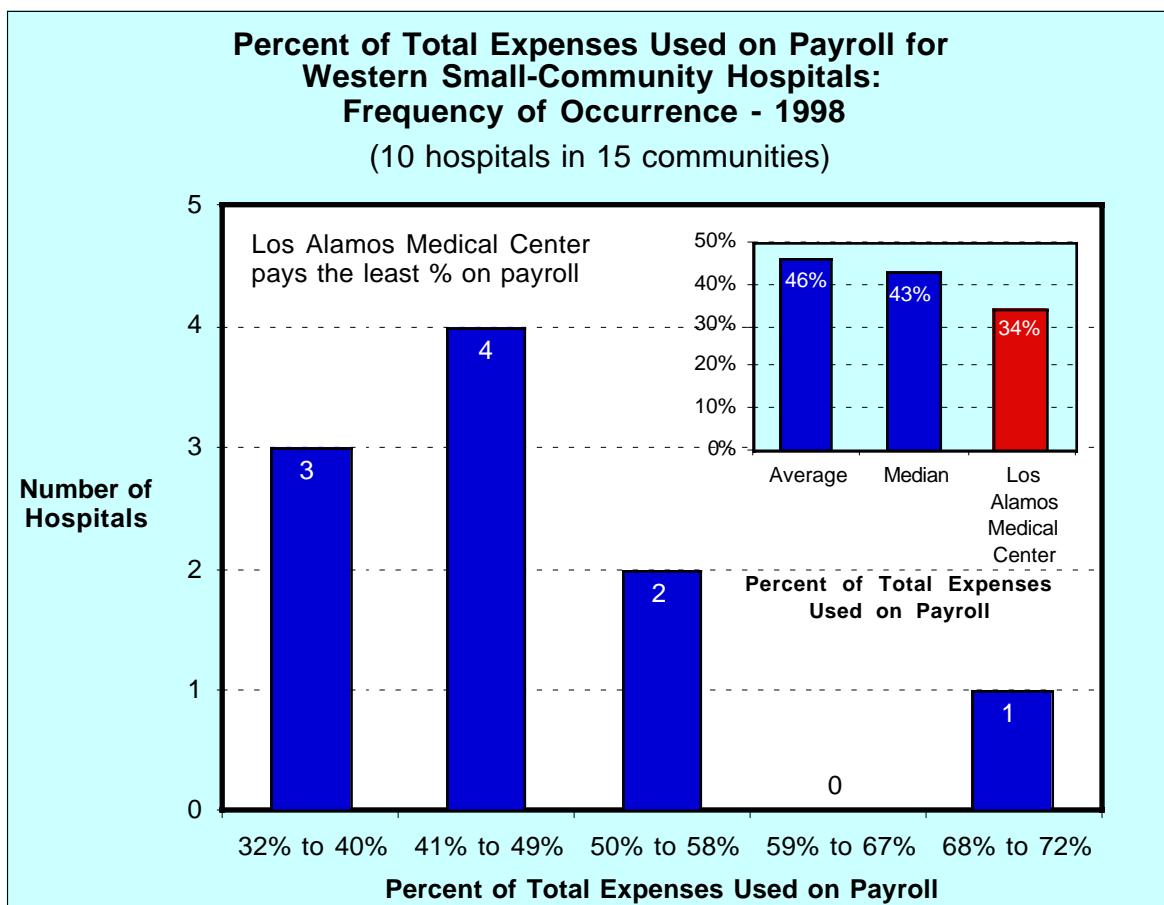
### Correlation of Total Expenses and Number of Personnel – 1998

Total annual hospital expenses is correlated with the number of personnel. LAMC is shown as the red diamond on the chart, and is slightly below the regression line having higher expenses and fewer employees than most of the 73 hospitals in the sample. The high volume of outpatient services at LAMC generates additional expenses in the form of supplies and equipment rather than in personnel.



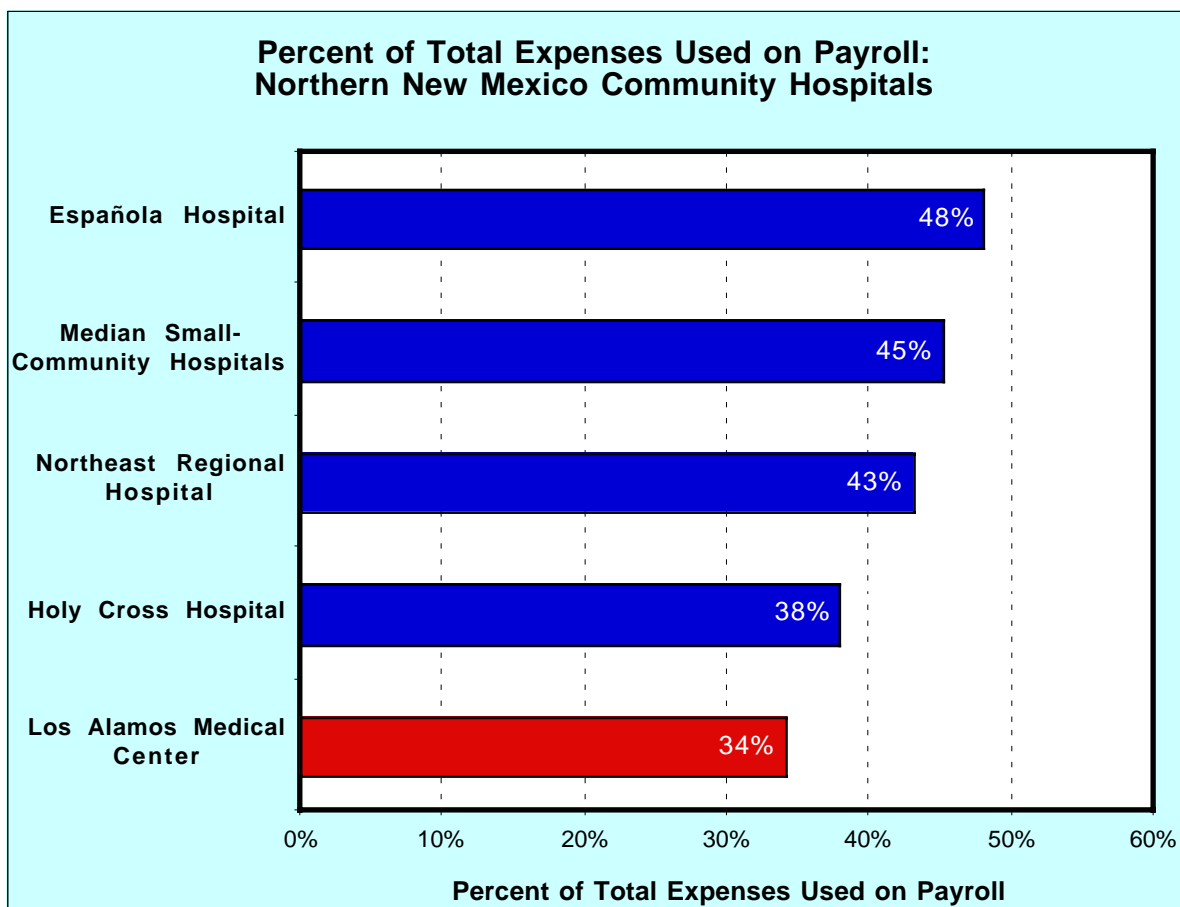
**Percent of Total Expenses Used on Payroll for Small-Community Hospitals: Frequency of Occurrence - 1998**

LAMC spends a smaller percentage of its total expenses on payroll than most small-community hospitals. In 1998, the percentage of total expenses used on payroll by LAMC was 34%. The median for small-community hospitals was 45%. LAMC ranked 72<sup>nd</sup> out of a sample of 74 hospitals.



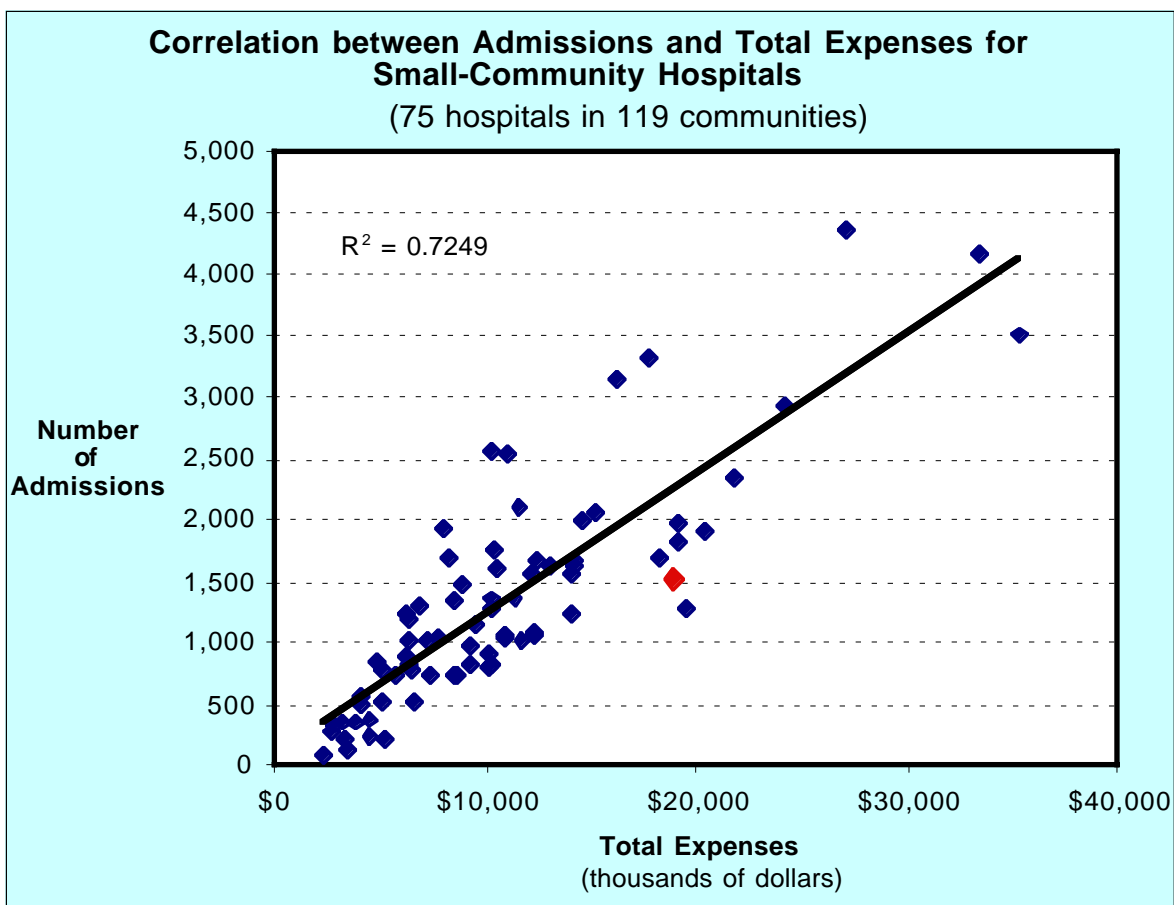
**Percent of Total Expenses Used on Payroll for Western Small-Community Hospitals: Frequency of Occurrence – 1998**

LAMC spent the least percent of its total expenses on payroll compared to the other western counties. The median for the western small-community hospital subset was 43%. LAMC ranked 10<sup>th</sup> out of a sample of 10 hospitals.



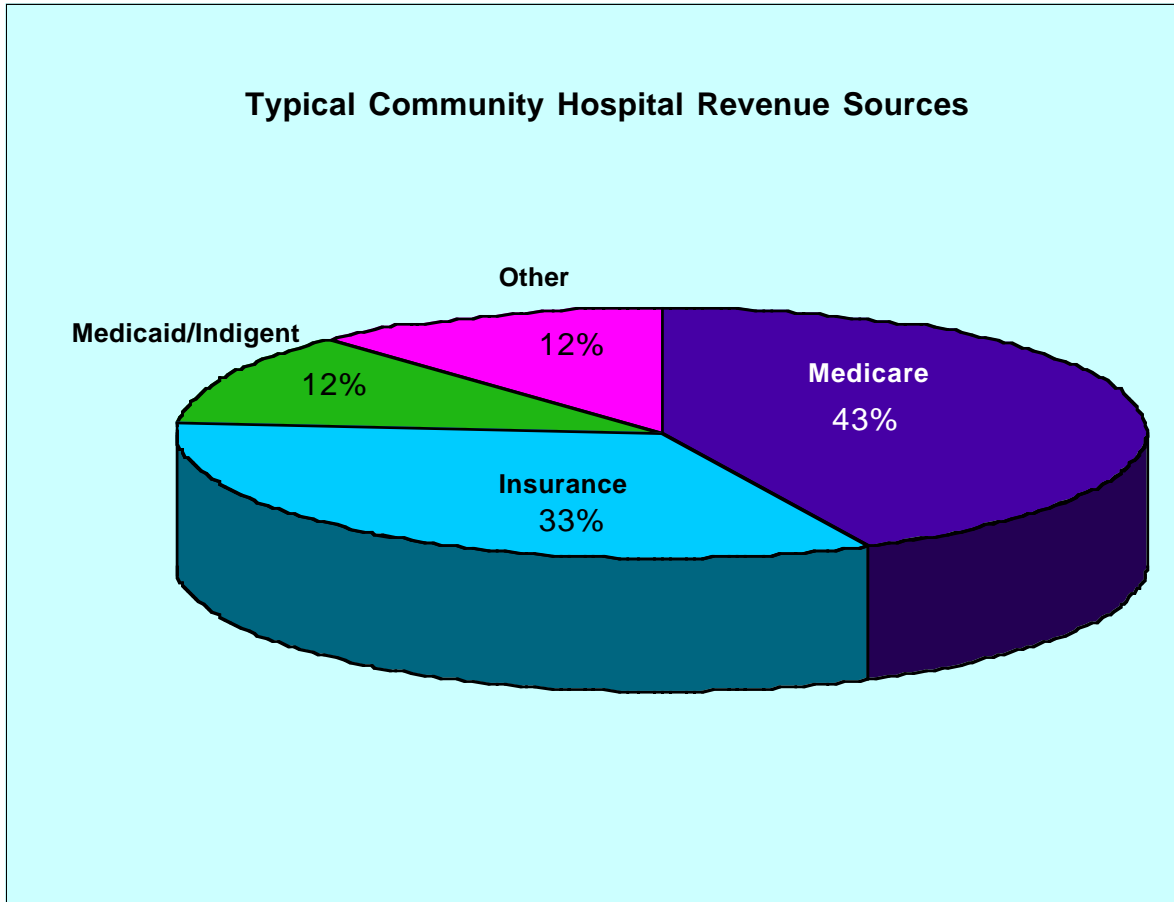
**Percent of Total Expenses Used on Payroll: Northern New Mexico Community Hospitals**

LAMC spends a small percentage on payroll expenses compared to other northern New Mexico hospitals. The 1998 LAMC average annual cost per full-time employee was less than the Española Hospital, the Holy Cross Hospital, and the Northeast Regional Hospital in Las Vegas, New Mexico.



### Correlation between Admissions and Total Expenses for Small-Community Hospitals

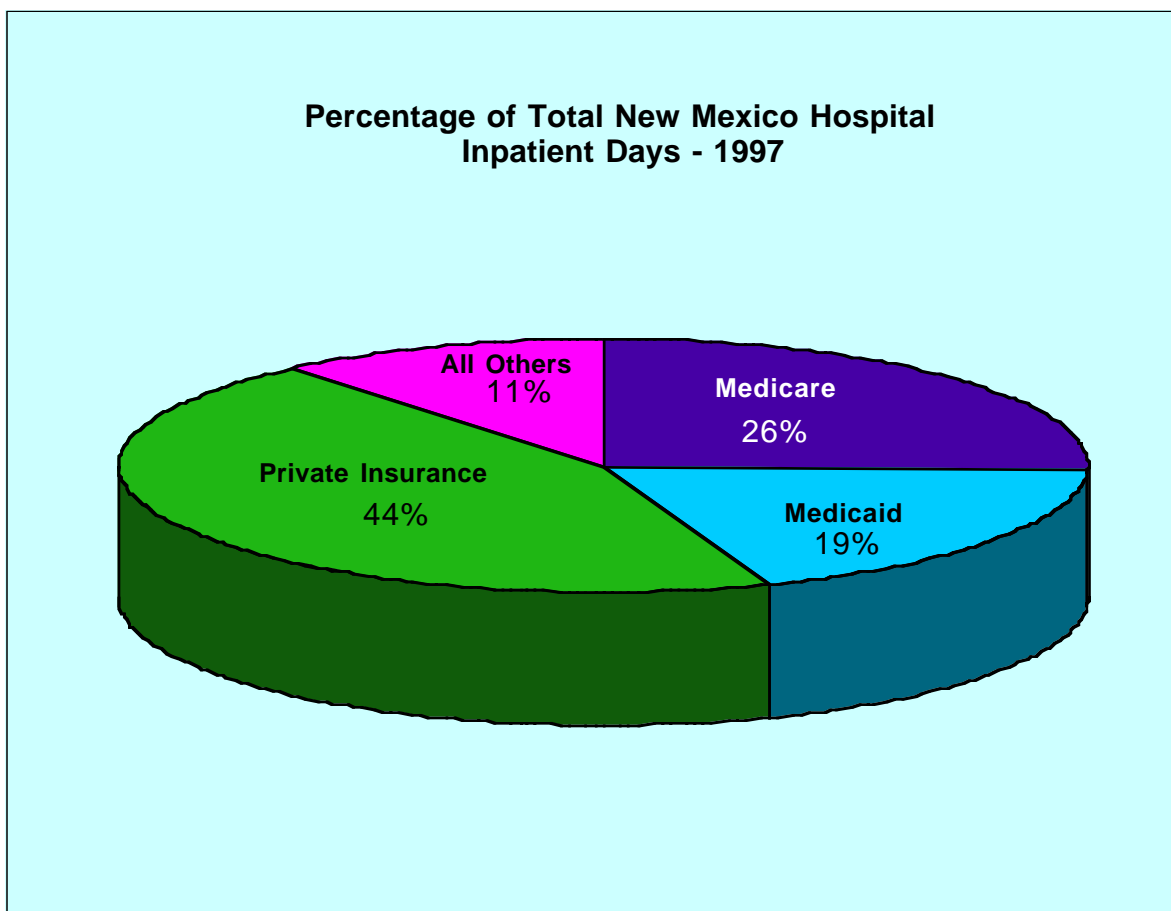
LAMC shown as the red diamond falls below the regression line indicating that LAMC's expenses are not as closely correlated to inpatient admissions as the majority of the data set. There is a slight correlation between annual admissions and total expenses for small-community hospitals ( $R^2 = 0.7$ ).



### Typical Community Hospital Revenue Sources

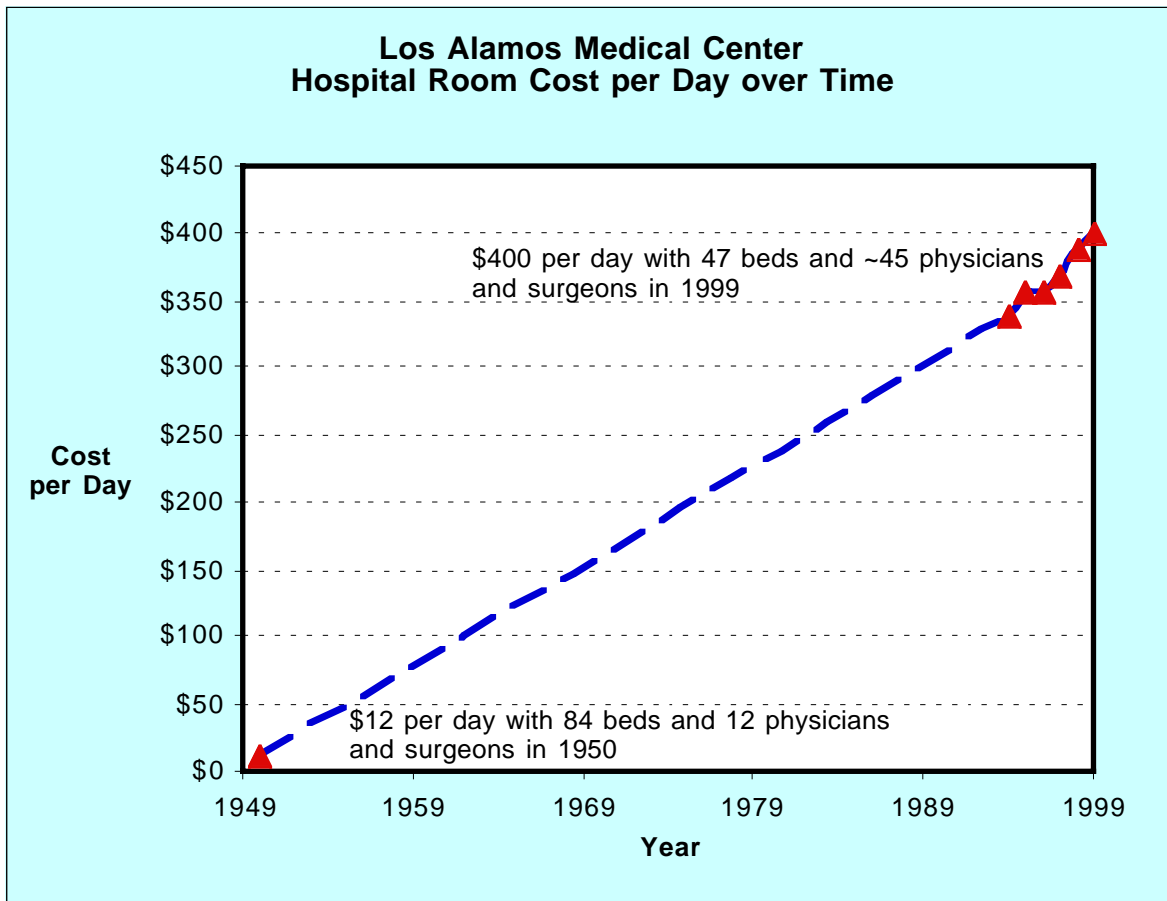
Medicare is typically the biggest source of revenue for most small-community hospitals. National averages for community hospital revenue sources are Medicare (43%), insurance (33%), Medicaid/indigent (12%), and other (12%). The other category includes philanthropy, actual patient payments and miscellaneous such as parking.





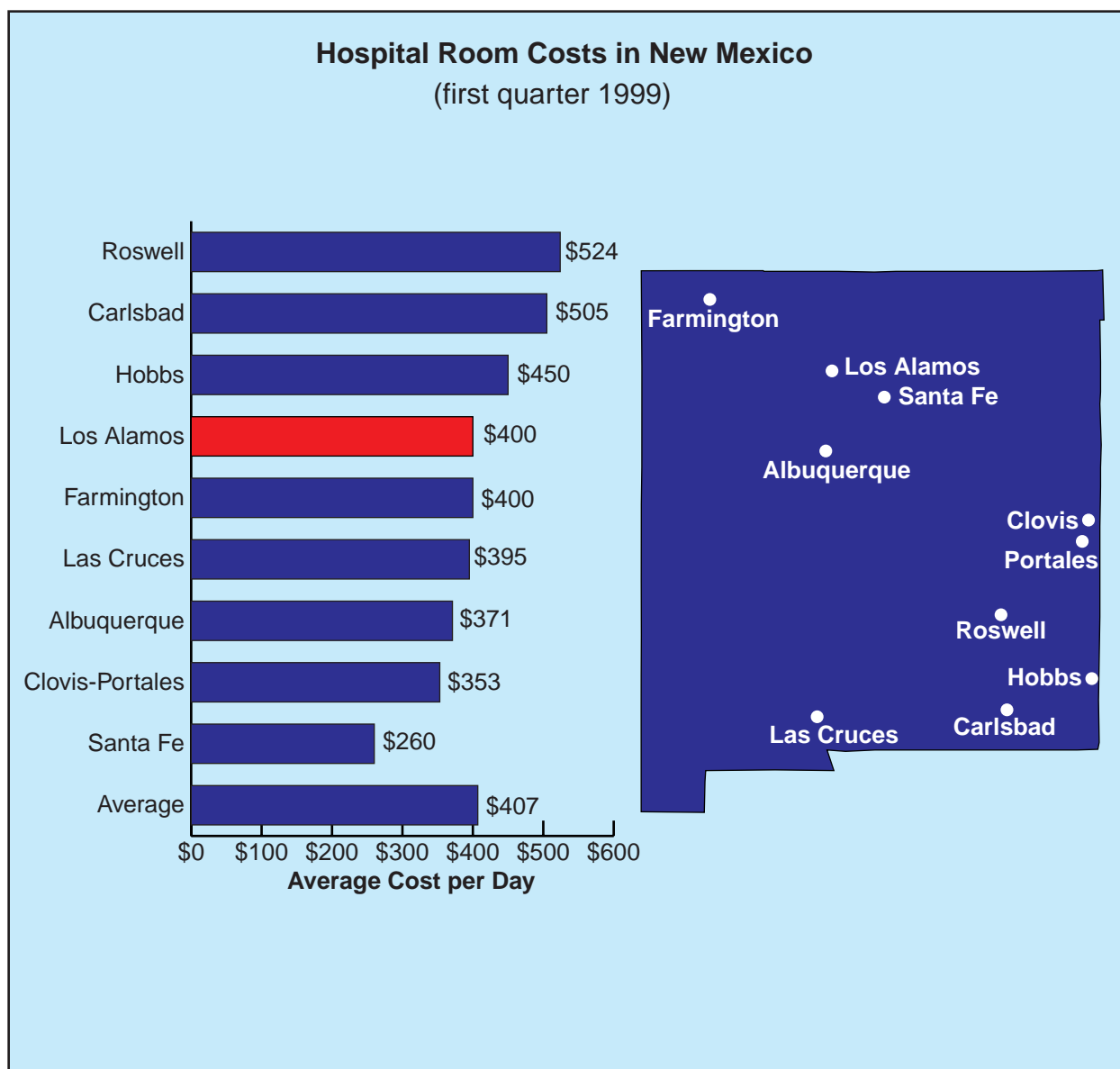
**Percentage of Total New Mexico Hospital Inpatient Days – 1997**

Patients with private insurance made up the largest portion of New Mexico inpatients in 1997. New Mexico hospital inpatient discharges were 44% for private insurance, 26% for Medicare, 19% for Medicaid, and 11% for all others.



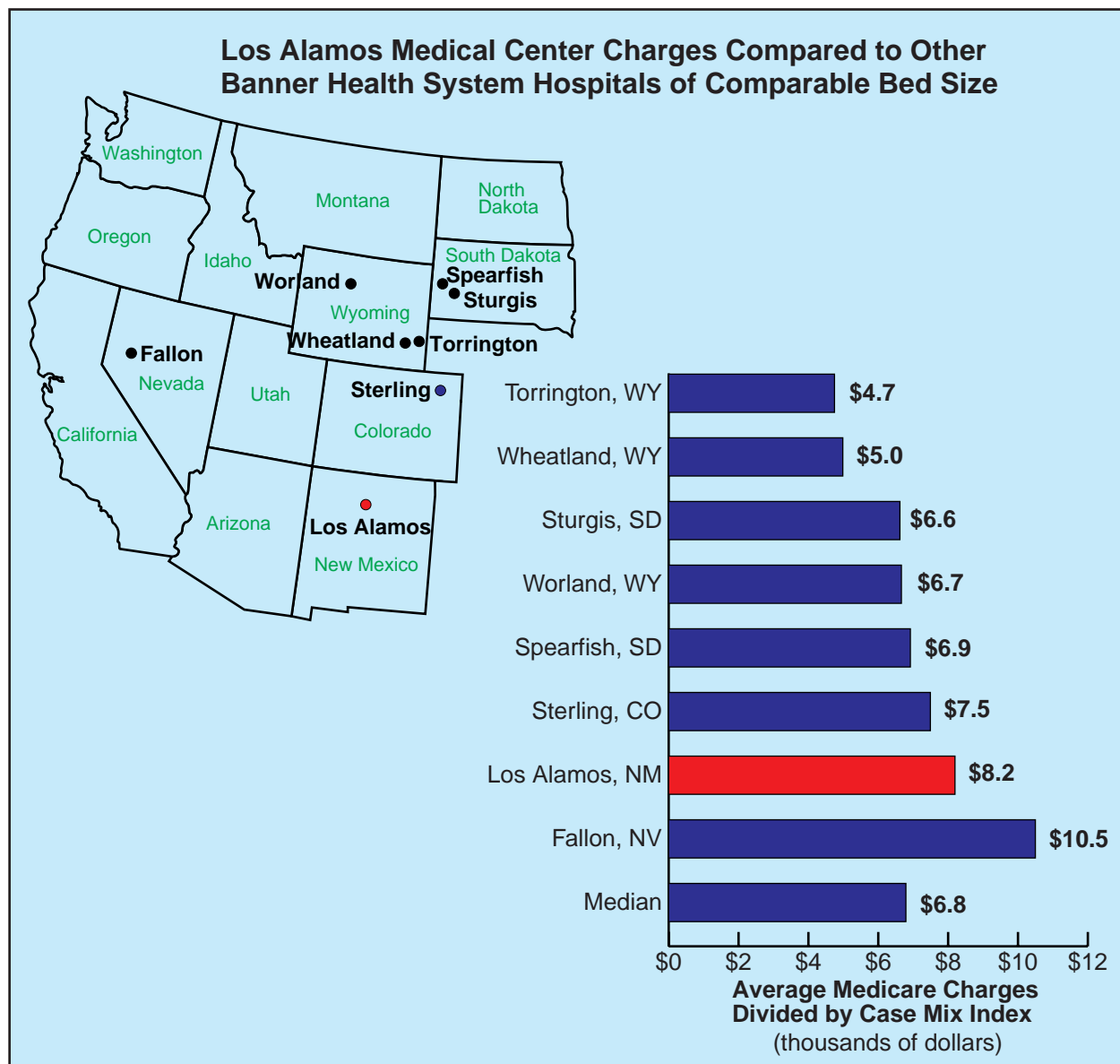
### Los Alamos Medical Center Hospital Room Cost per Day over Time

LAMC fits the national trends where cost per day and number of physicians has increased and number of beds has decreased substantially. In 1950, LAMC's cost was \$12 per day. The hospital had 84 staffed beds, and 12 physicians and surgeons. In 1999, LAMC's cost was \$400 per day. The hospital had 47 staffed beds and approximately 45 physicians and surgeons.



### Hospital Room Costs in New Mexico

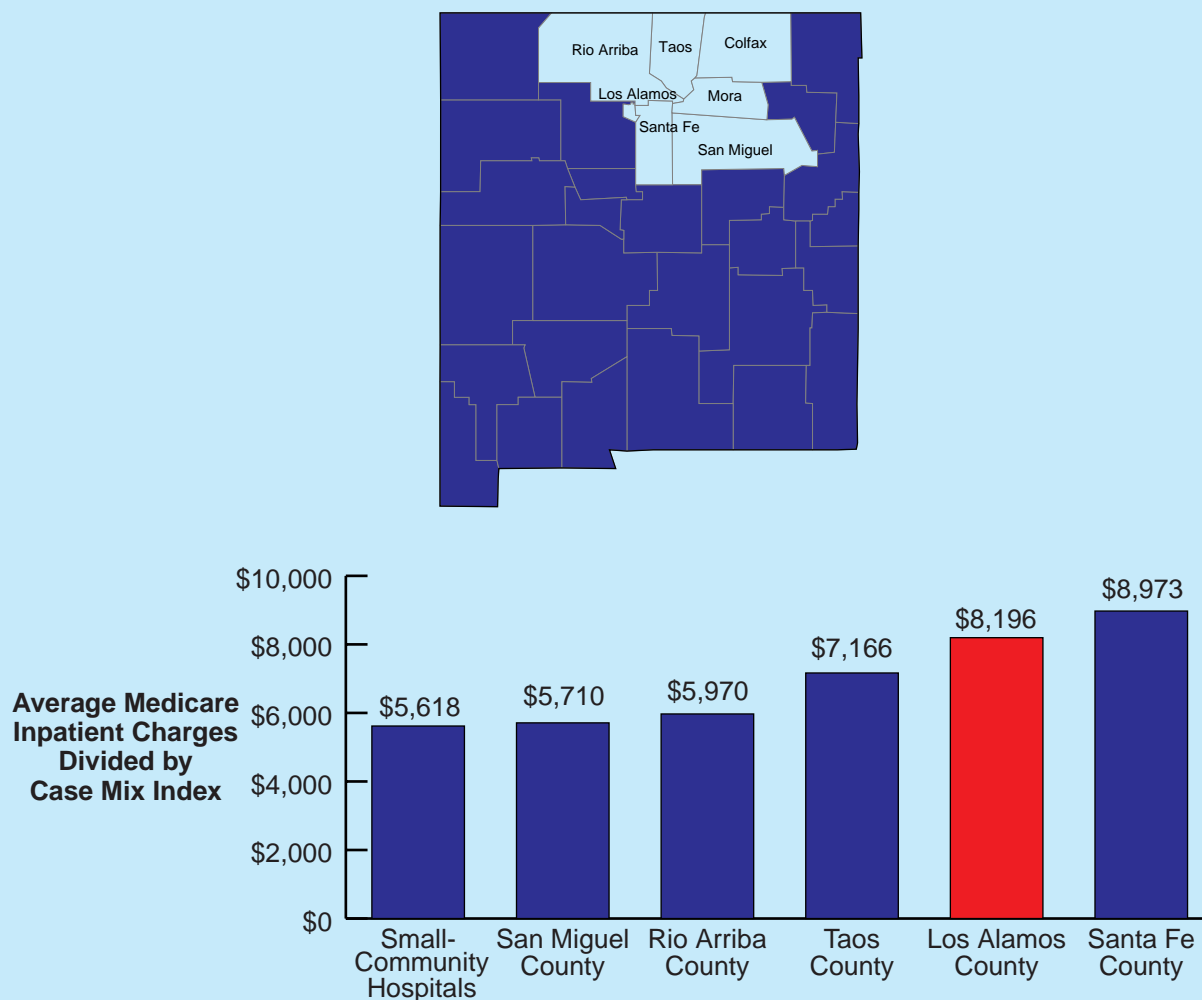
Chamber of Commerce data reveal that hospital room cost per day in Los Alamos is close to the average cost per day in New Mexico. The cost per day in southeastern New Mexico communities is much higher.



### Los Alamos Medical Center Charges Compared to Other Banner Health System Hospitals of Comparable Bed Size

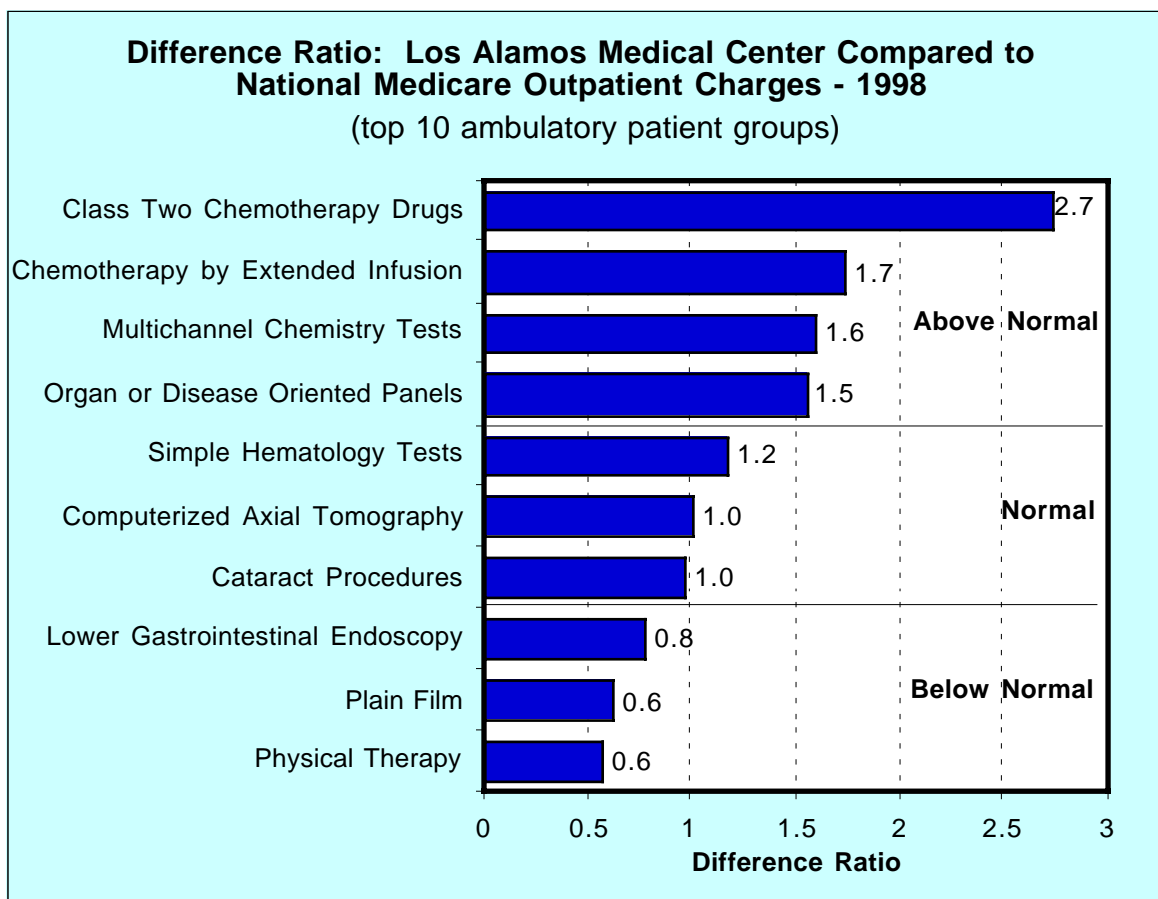
LAMC has high inpatient Medicare charges. LAMC inpatient Medicare charges/case mix index is one of the highest among the data set for Banner Health System hospitals. Fallon, Nevada is the only Banner Health System hospital with higher inpatient Medicare charges/case mix index. Most Banner Health System hospitals in the data set are distributed fairly evenly around the median.

### Average Medicare Inpatient Charges Divided by Case Mix Index for Northern New Mexico Regional Hospitals



### Average Medicare Inpatient Charges Divided by Case Mix Index for Northern New Mexico Regional Hospitals

Los Alamos has higher inpatient Medicare charges than most northern New Mexico hospitals. When inpatient Medicare charges/case mix index is compared with northern New Mexico, Los Alamos is second only to Santa Fe, which is not considered a small-community hospital.



**Difference Ratio: Los Alamos Medical Center Compared to National Medicare Outpatient Charges – 1998**

Four out of 10 outpatient Medicare service charges are above normal at LAMC. However, three are below normal and three are within normal range. Chemotherapy by extended infusion and Class Two Chemotherapy drugs are fairly expensive outpatient services to begin with. The difference ratio is the amount the particular hospital charge varies from the national average.

**Northern New Mexico Hospitals Top Ten Medicare Ambulatory Patient Group Costs Compared to National Costs**

Medicare outpatient service charges range from below to above normal for northern New Mexico hospitals. Ambulatory care is care provided to a person who is not a bed patient in a health care institution. Ambulatory patient group is the term used by Medicare to classify outpatient care for reimbursement.

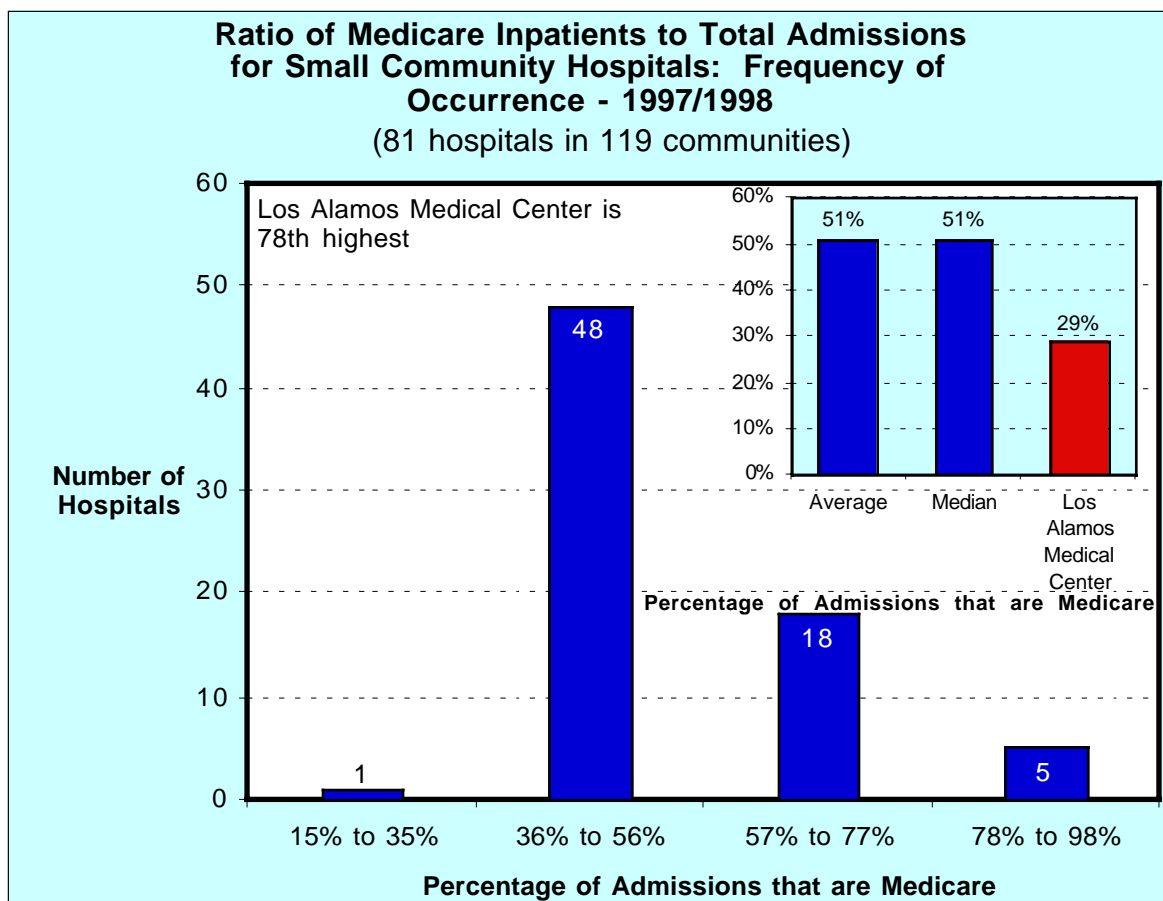
Charges that are 21% and below the national norm are considered below normal. Charges that are 21% and above the national norm are considered above normal. Costs for all hospitals tend to be spread pretty uniformly except for three ambulatory patient groups at the high end.

Three ambulatory patient group categories that have high costs are LAMC's Class Two chemotherapy drugs at over twice the normal charge; Española Hospital's pulmonary tests at almost 3 times the normal charge; and St. Vincent's infusion therapy (except chemotherapy) that is more than 11 times the normal charge.

## Northern New Mexico Hospitals Top Ten Medicare Ambulatory Patient Group Costs Compared to National Costs

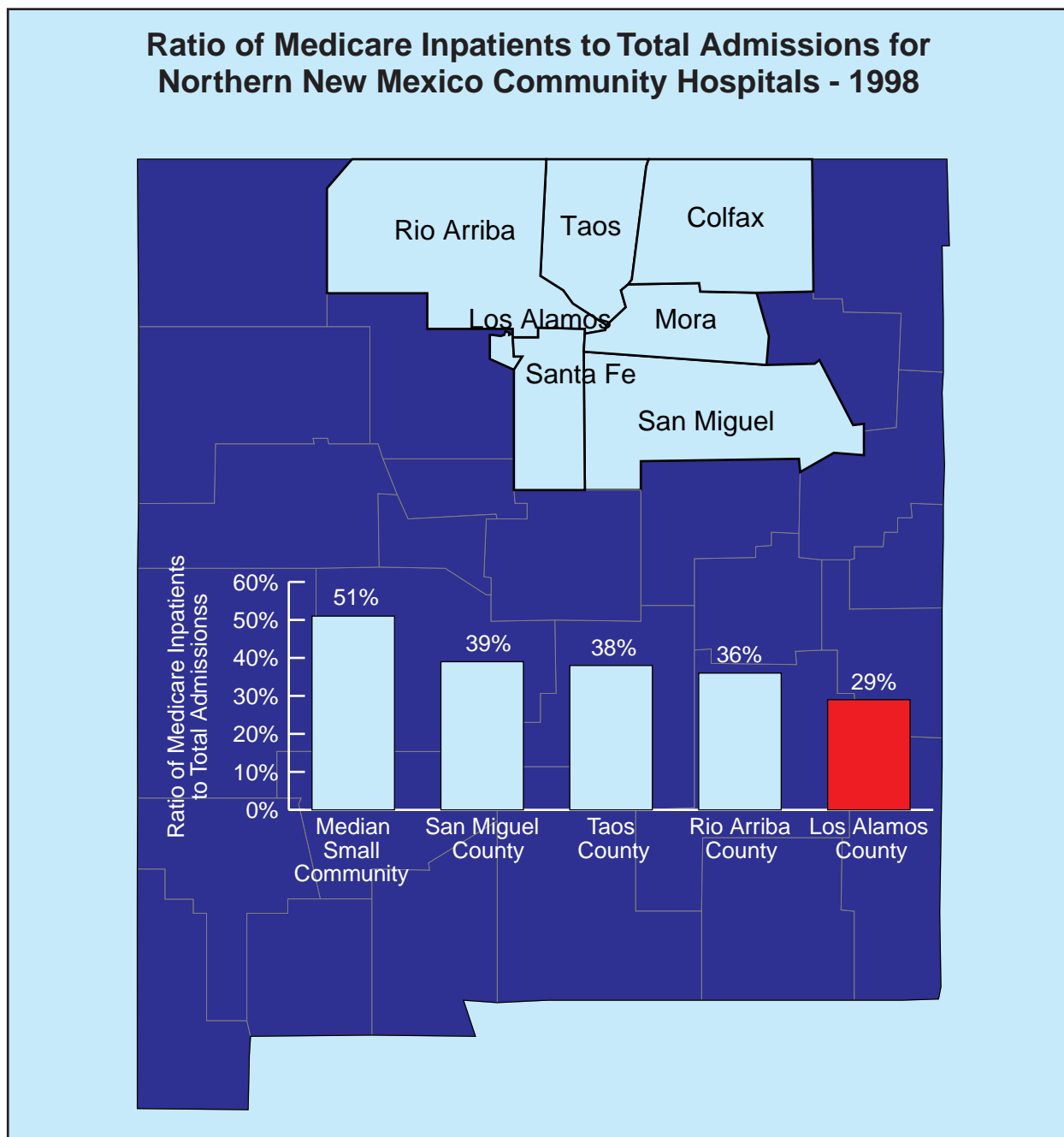
Region	Top Ten Ambulatory Patient Groups	Difference Ratio	Medicare Charge	National Average
<b>Below National Average Charges</b>				
Holy Cross Hospital	Simple Chemistry Tests	0.38	\$25	\$65
Northeast Regional Hospital	Multichannel Chemistry Tests	0.39	\$26	\$67
Holy Cross Hospital	Multichannel Chemistry Tests	0.39	\$26	\$67
Northeast Regional Hospital	Pulmonary Tests	0.40	\$167	\$414
Española Medical Center	Multichannel Chemistry Tests	0.46	\$31	\$67
Holy Cross Hospital	Simple Hematology Tests	0.50	\$15	\$30
Los Alamos Medical Center	Physical Therapy	0.57	\$242	\$428
Northeast Regional Hospital	Diagnostic Ultrasound except Obstetrical	0.57	\$175	\$306
Los Alamos Medical Center	Plain Film	0.62	\$76	\$123
Española Medical Center	Lower Gastrointestinal Endoscopy	0.64	\$638	\$994
Holy Cross Hospital	Arthroscopy	0.69	\$1,598	\$2,323
Española Medical Center	Diagnostic Ultrasound except Obstetrical	0.69	\$212	\$306
Northeast Regional Hospital	Plain Film	0.70	\$86	\$123
St. Vincent Hospital	Magnetic Resonance Imaging	0.73	\$843	\$1,158
Northeast Regional Hospital	Echocardiography	0.76	\$285	\$373
Los Alamos Medical Center	Lower Gastrointestinal Endoscopy	0.77	\$762	\$994
Española Medical Center	Computerized Axial Tomography	0.78	\$582	\$749
Holy Cross Hospital	Cataract Procedures	0.79	\$2,437	\$3,070
<b>Comparable to National Average Charges</b>				
St. Vincent Hospital	Therapeutic Radiation Treatment Preparation	0.81	\$339	\$420
St. Vincent Hospital	Computerized Axial Tomography	0.85	\$634	\$749
Northeast Regional Hospital	Cataract Procedures	0.86	\$2,630	\$3,070
Holy Cross Hospital	Plain Film	0.89	\$109	\$123
Holy Cross Hospital	Computerized Axial Tomography	0.93	\$693	\$749
Holy Cross Hospital	Magnetic Resonance Imaging	0.94	\$1,085	\$1,158
Española Medical Center	Physical Therapy	0.95	\$406	\$428
Los Alamos Medical Center	Cataract Procedures	0.97	\$2,977	\$3,070
St. Vincent Hospital	Diagnostic Ultrasound except Obstetrical	0.98	\$301	\$306
Northeast Regional Hospital	Simple Hematology Tests	1.00	\$30	\$30
Los Alamos Medical Center	Computerized Axial Tomography	1.01	\$754	\$749
Española Medical Center	Plain Film	1.01	\$124	\$123
Española Medical Center	Simple Cystourethroscopy	1.02	\$958	\$938
St. Vincent Hospital	Plain Film	1.04	\$128	\$123
Española Medical Center	Miscellaneous Radiological Procedure with Contrast	1.04	\$494	\$474
Española Medical Center	Fracture Dislocation Sprain	1.07	\$353	\$329
Northeast Regional Hospital	Computerized Axial Tomography	1.09	\$818	\$749
Northeast Regional Hospital	Magnetic Resonance Imaging	1.11	\$1,291	\$1,158
Los Alamos Medical Center	Simple Hematology Tests	1.17	\$35	\$30
<b>Above National Average Charges</b>				
St. Vincent Hospital	Physical Therapy	1.21	\$519	\$428
St. Vincent Hospital	Pulmonary Tests	1.30	\$537	\$414
St. Vincent Hospital	Cardiac Rehabilitation	1.37	\$510	\$372
Northeast Regional Hospital	Physical Therapy	1.38	\$591	\$428
St. Vincent Hospital	Radiation Therapy and Hyperthermia	1.51	\$2,401	\$1,594
Los Alamos Medical Center	Organ or Disease Oriented Panels	1.55	\$102	\$66
Los Alamos Medical Center	Multichannel Chemistry Tests	1.60	\$107	\$67
Holy Cross Hospital	Physical Therapy	1.71	\$731	\$428
Holy Cross Hospital	Pulmonary Tests	1.73	\$715	\$414
Los Alamos Medical Center	Chemotherapy by Extended Infusion	1.74	\$1,716	\$985
Española Medical Center	Pulmonary Tests	2.15	\$891	\$414
Los Alamos Medical Center	Class Two Chemotherapy Drugs	2.74	\$3,058	\$1,117
St. Vincent Hospital	Infusion Therapy except Chemotherapy	11.48	\$1,756	\$153





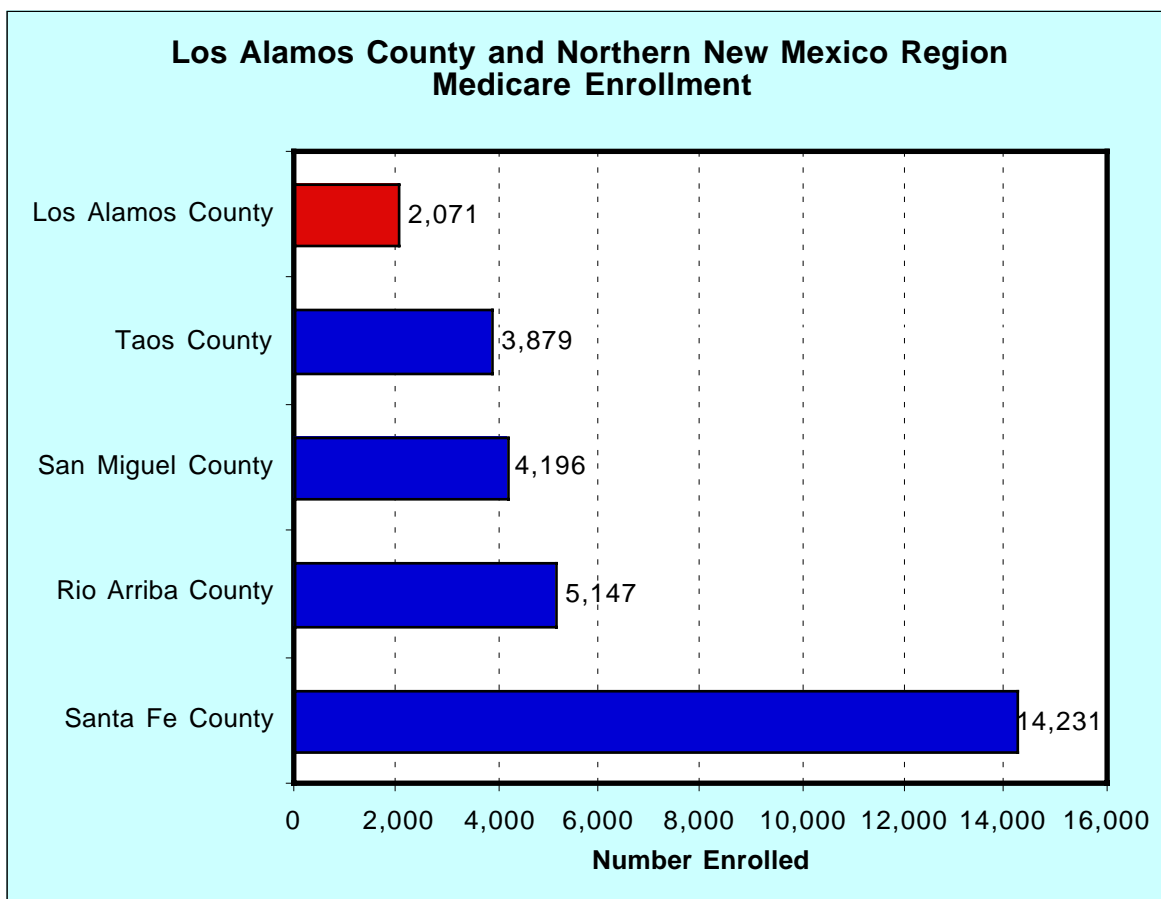
**Ratio of Medicare Inpatients to Total Admissions for Small-Community Hospitals: Frequency of Occurrence – 1997/1998**

LAMC has a small ratio of Medicare inpatients to total admissions compared to small-community hospitals. This supports earlier findings that LAMC receives a smaller proportion of revenue from Medicare patients. In 1997/1998, the ratio of Medicare inpatients to total admissions for LAMC was 29%. The median for small-community hospitals was 51% and for western small-community hospitals 36%. LAMC ranked 78<sup>th</sup> out of a sample of 81 hospitals. LAMC was substantially below the median for the total sample and for the western subset.



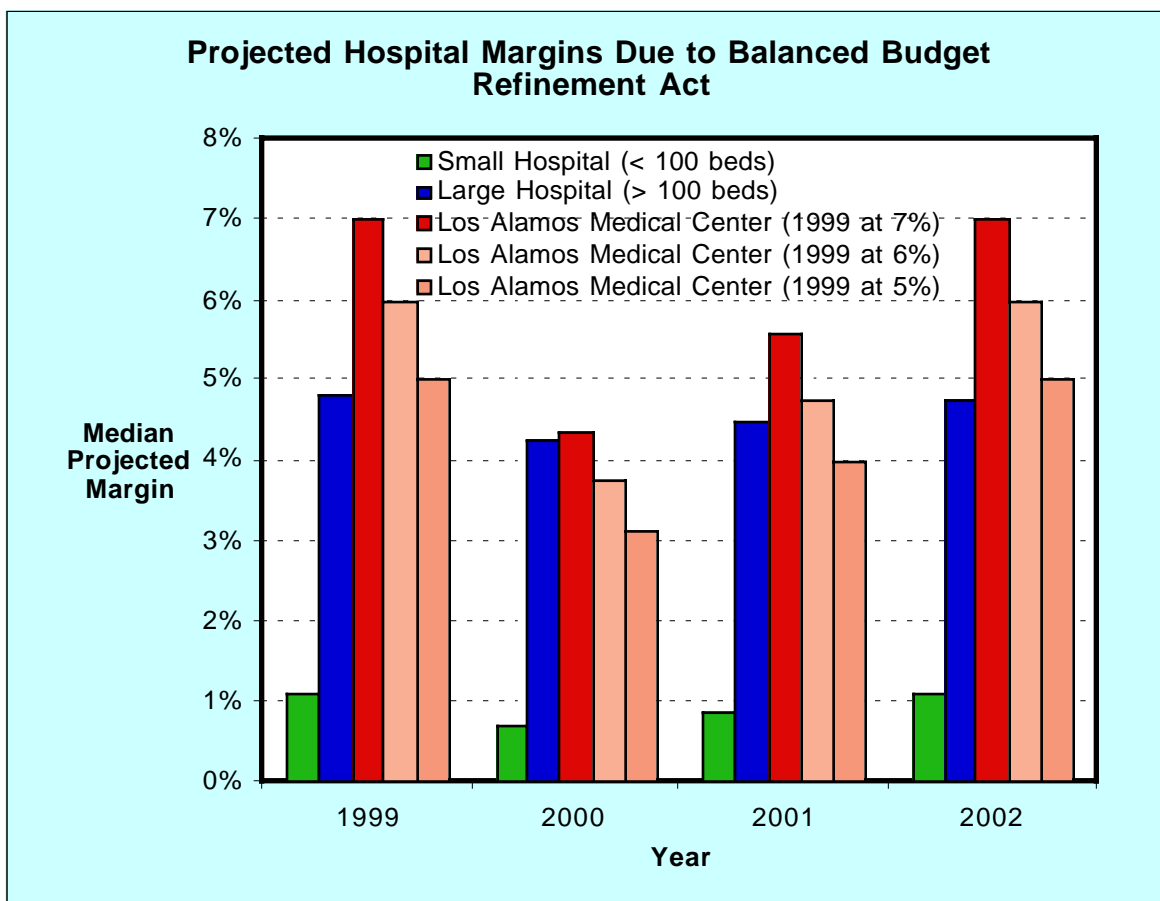
**Ratio of Medicare Inpatients to Total Admissions for Northern New Mexico Community Hospitals – 1998**

LAMC has a small ratio of Medicare inpatients to total admissions compared to northern New Mexico hospitals.



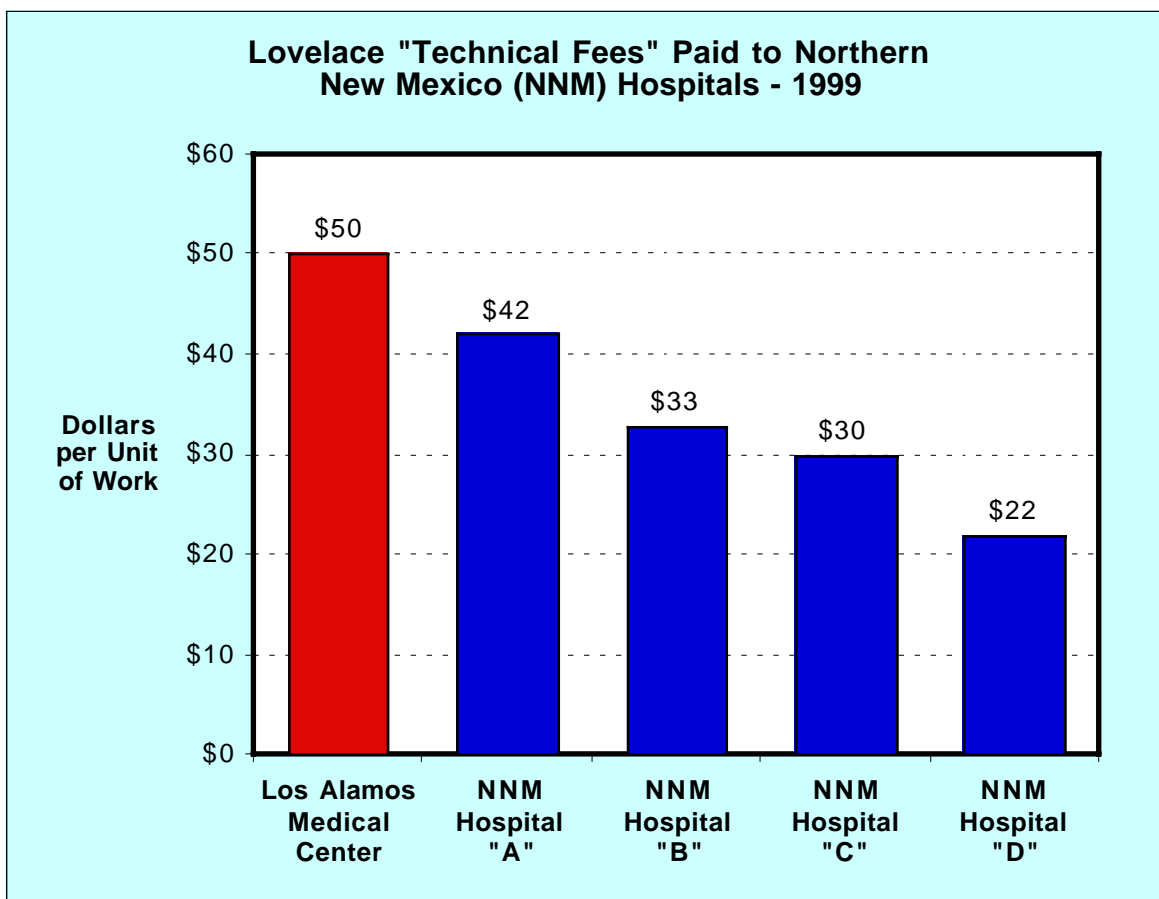
#### **Los Alamos County and Northern New Mexico Region Medicare Enrollment**

Medicare enrollment in Los Alamos County is substantially less than surrounding counties.



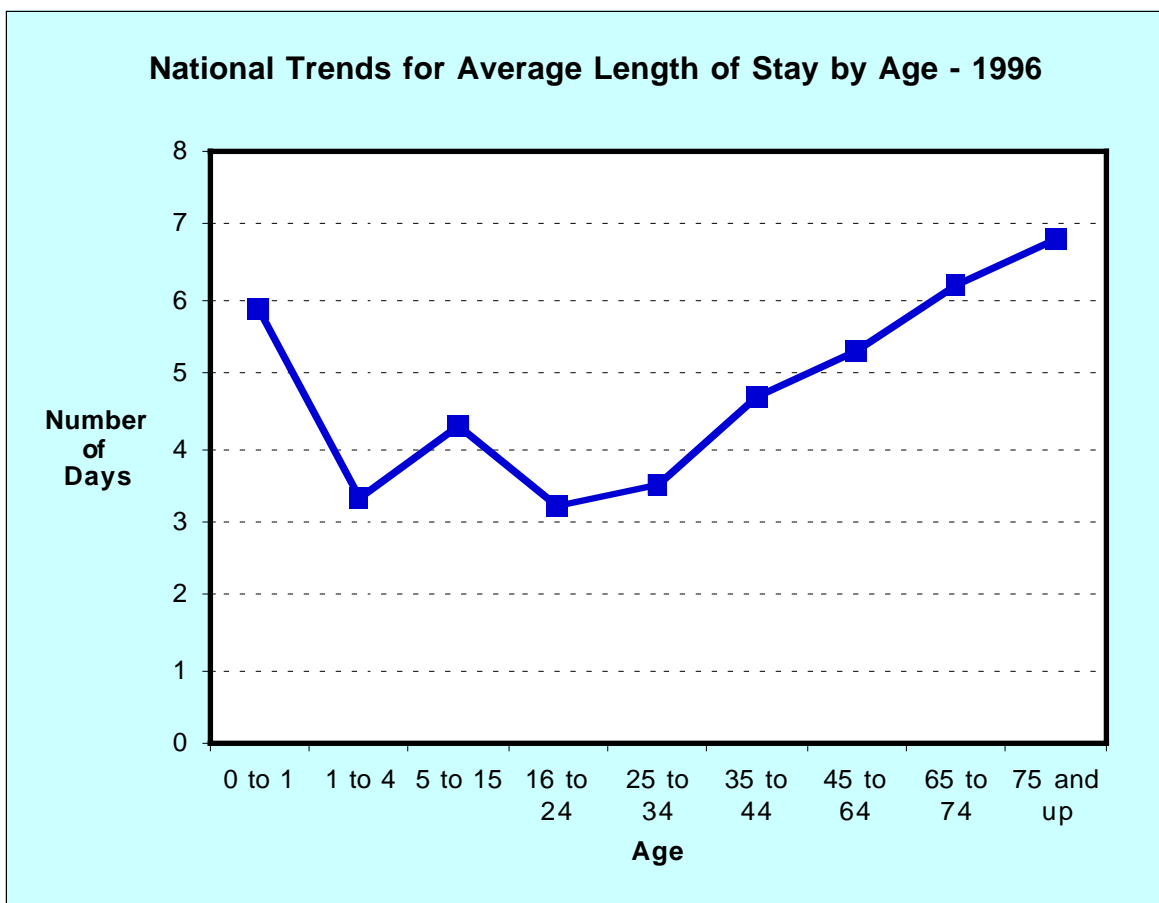
### Projected Hospital Margins Due to Balanced Budget Refinement Act

The 1997 Balanced Budget Act put in place lower Medicare reimbursement rates that will affect all hospitals in the nation. Although LAMC may suffer revenue losses due to the Act, margins should not go much lower than 3% since LAMC maintains higher than median margins. The 1999 Balanced Budget Refinement Act put measures in place to assist hospitals but these effects will not be evident until 2001 and 2002. The year 2000 will be the most difficult year for hospitals. Because LAMC has less than the normal number of Medicare patients, the effects will be less drastic.



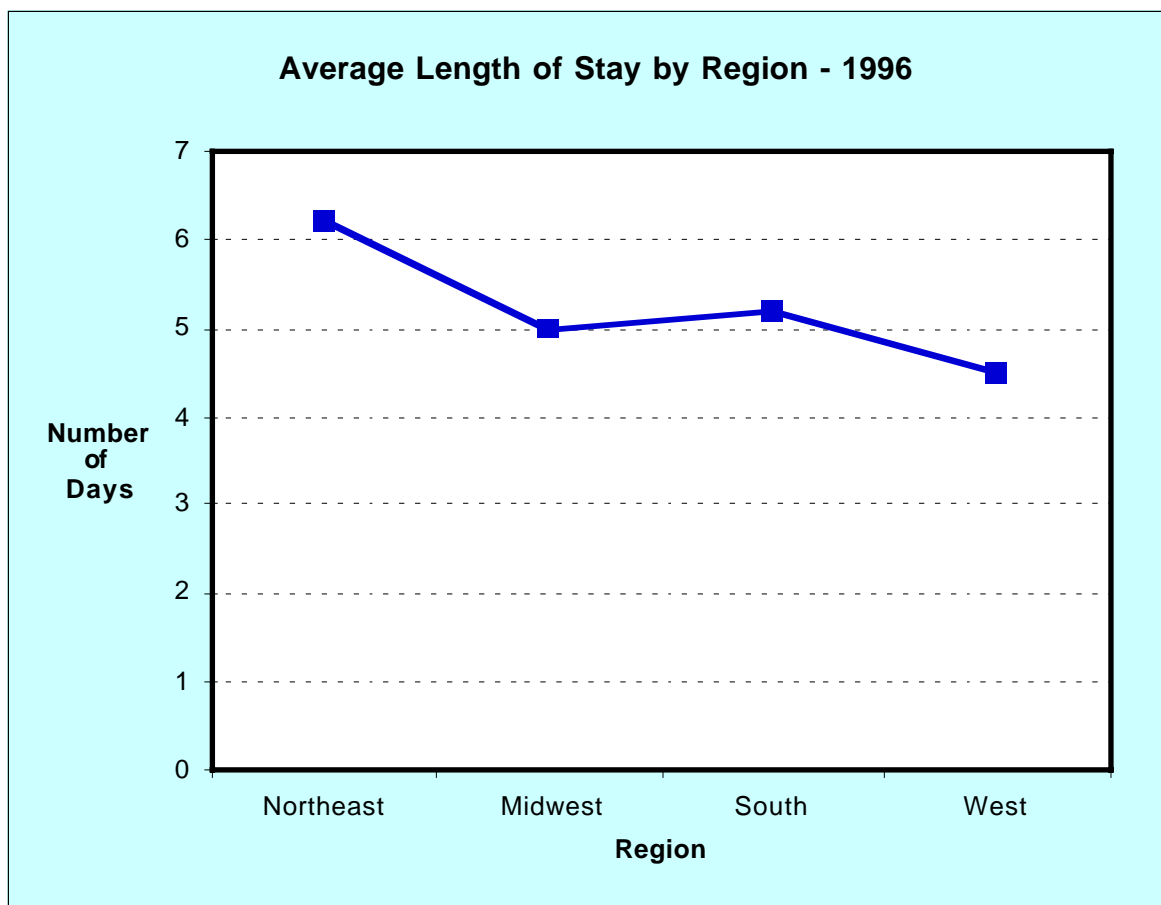
#### **Lovelace "Technical Fees" Paid to Northern New Mexico (NNM) Hospitals – 1999**

In the spring of 2000, Lovelace Healthcare terminated its contract with LAMC because of high costs. At a public meeting, Lovelace presented technical fee charges as an example of high costs. According to Lovelace, LAMC technical fees charged to Lovelace are substantially higher than four unnamed northern New Mexico hospitals.



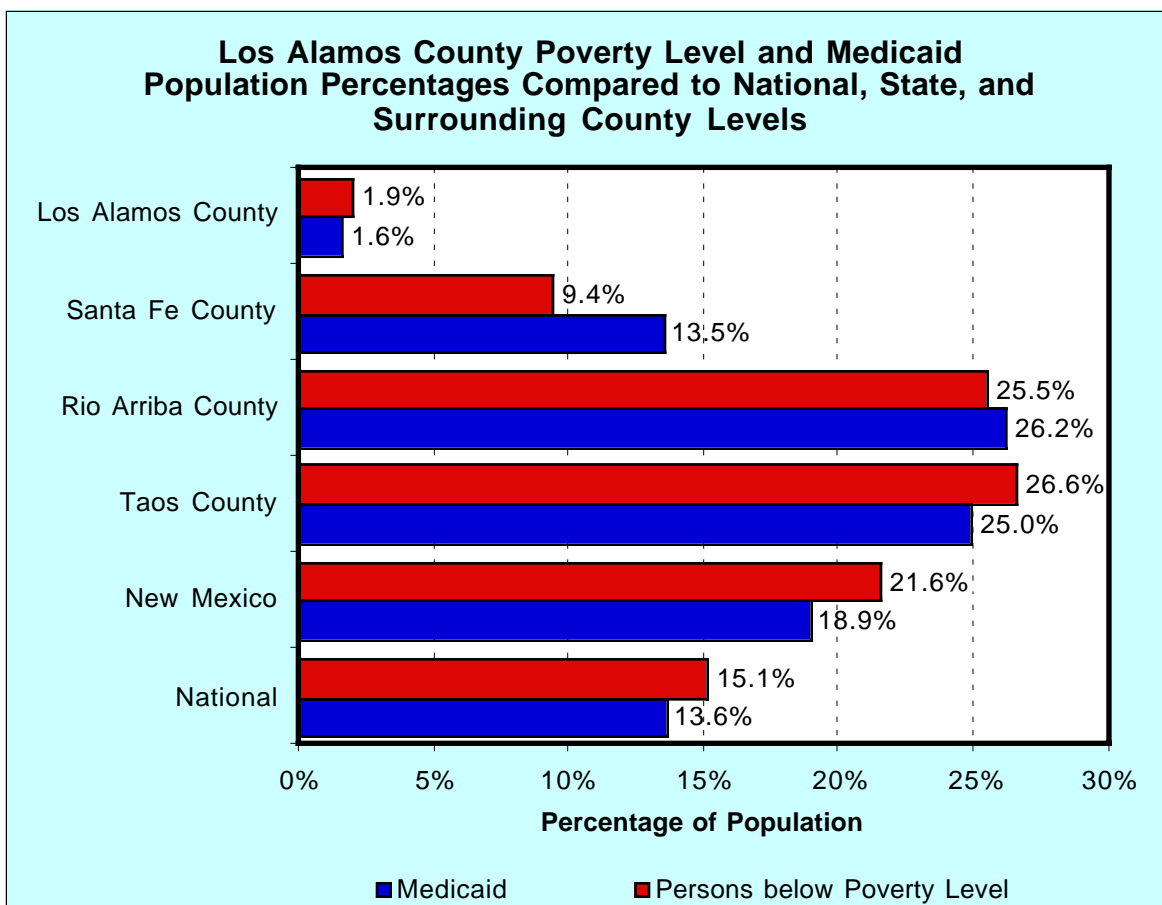
#### National Trends for Average Length of Stay by Age – 1996

The national average for the average length of stay by age shows that the average length of stay increases steadily at age 35. LANL retirees have been reported to have significantly higher utilization than employees, which would be expected, because the largest health care costs are incurred during the first year of life or in the later years of life.



#### **Average Length of Stay by Region – 1996**

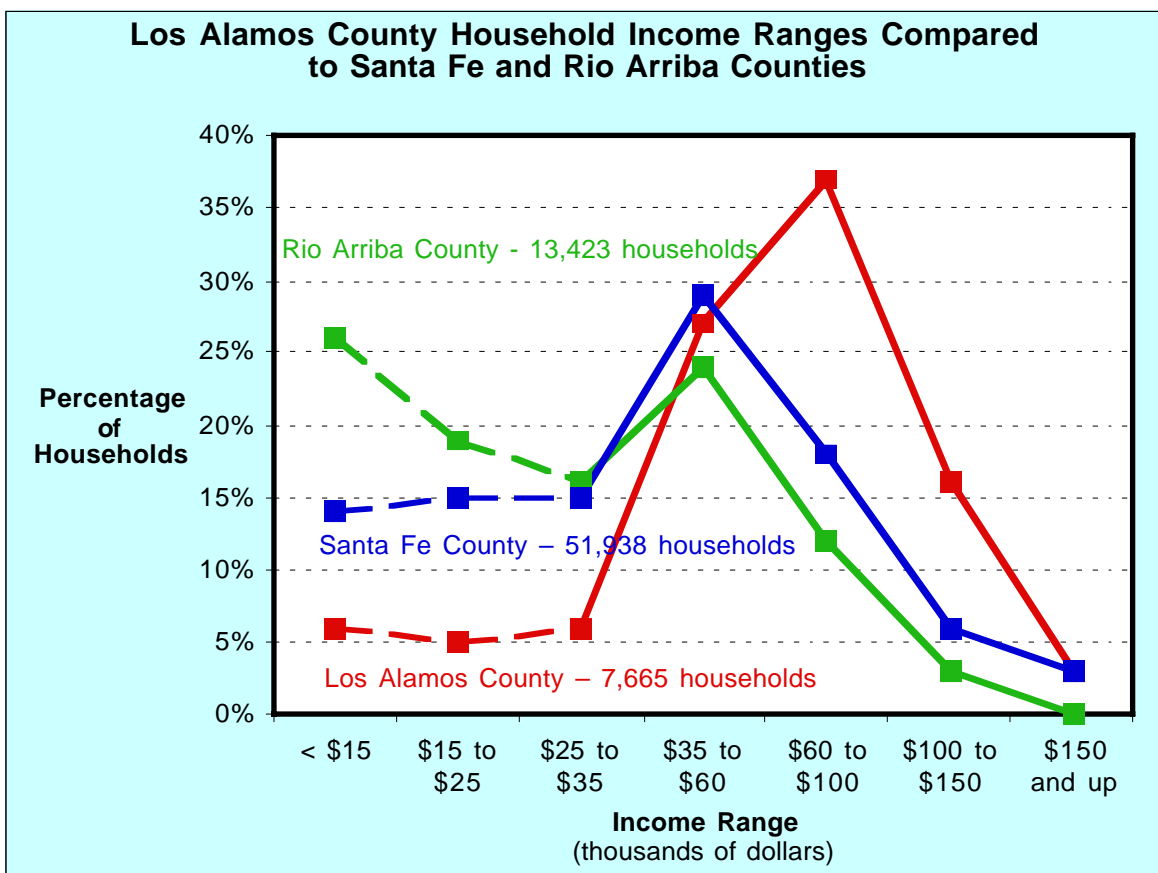
The western region of the United States has the lowest average length of stay. New Mexico, as part of the western region, should follow this trend.



**Los Alamos County Poverty Level and Medicaid Population Percentages Compared to National, State, and Surrounding County Levels**

Los Alamos County has a larger proportion of well-insured patients making it a desirable location for health care providers. Los Alamos County has a very small proportion of persons below the poverty level and eligible for Medicaid.





### Los Alamos County Household Income Ranges Compared to Santa Fe and Rio Arriba Counties

Los Alamos County has fewer households in the lower income ranges. Los Alamos County has a much lower potential of indigent patients and patients who cannot pay for care than other surrounding hospitals. The dotted lines indicate income levels that have a higher potential to qualify for indigent care or consume care that will be uncompensated.

## Emergency Room Fact Sheet

- **Typical trauma center has**
  - 24-hour service
  - 7-day availability
  - medical and surgical specialists present at all times
  - diagnostic imaging
  - operating rooms
  - well-staffed intensive care units
- **St. Vincent Hospital (nearest trauma center)**
- **University Hospital (nearest top level trauma center)**
- **93% of community hospitals have emergency departments**
- **40% of unscheduled admissions to hospital go through emergency department and therefore generate other hospital revenue**
- **43% of patients seen in emergency departments are nonurgent (57% urgent to emergent)**
- **Last 10 to 20 years community hospitals are contracting with emergency service providers instead of using staff physicians**
- **Urgent care centers are becoming more popular and increase efficiency while reducing costs**
- **Most emergency rooms barely break even or are slightly in the red**
- **Hospital financial accounting methods usually spread costs across service units**
- **Emergency rooms typically generate revenue for other more lucrative departments**
  - x-ray and diagnostic imaging
  - laboratory
  - pharmacy

### Emergency Room Fact Sheet

The Emergency Room Fact Sheet shows typical information for emergency departments.

Los Alamos Medical Center

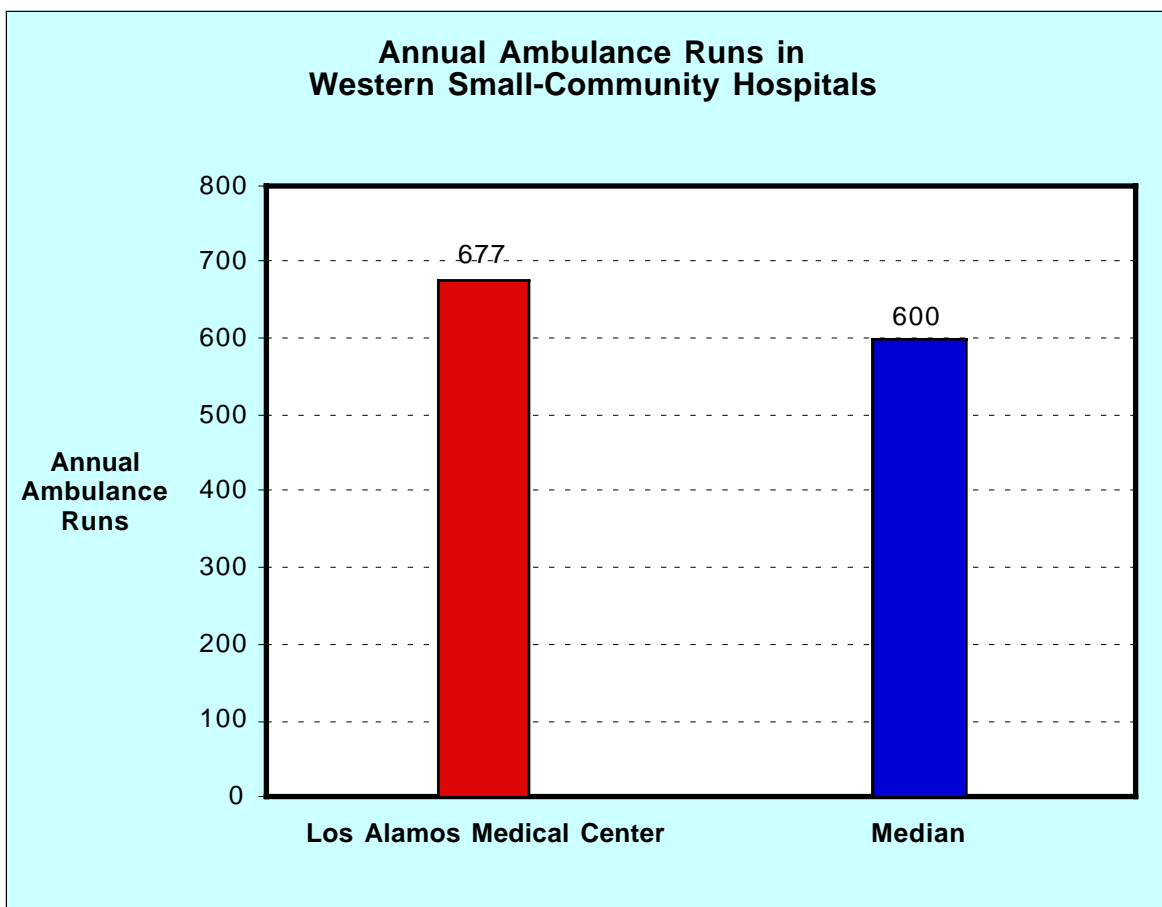


St. Vincent Hospital



### Los Alamos Medical Center and St. Vincent Heliports

Helicopter transport is essential for western small-community hospitals because it links them to trauma level care that is not typically available locally. Eleven out of thirteen hospitals in the western community subset have helicopter service available. University Hospital in Albuquerque is a top trauma level center and provides helicopter transport for LAMC and St. Vincent Hospital patients.



#### **Annual Ambulance Runs in Western Small-Community Hospitals**

Of the western hospitals, the median annual number of ambulance runs was 600. At LAMC there are 677 ambulance runs per year. Ambulance runs in Los Alamos County are somewhat higher than most western small communities. Although the county ambulance service covers both the community and LANL calls, only 55 ambulance runs went to Laboratory property in 1998.



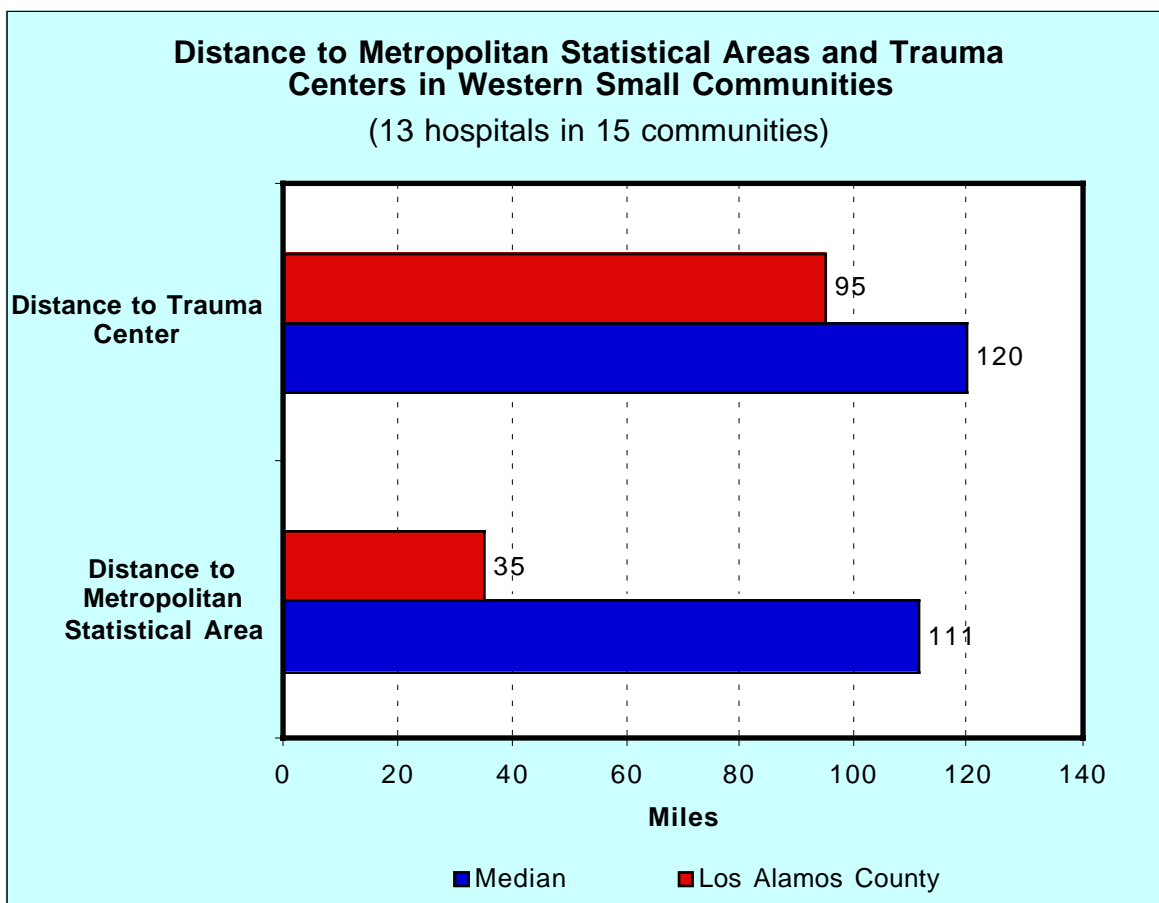
White Rock, New Mexico



Española, New Mexico

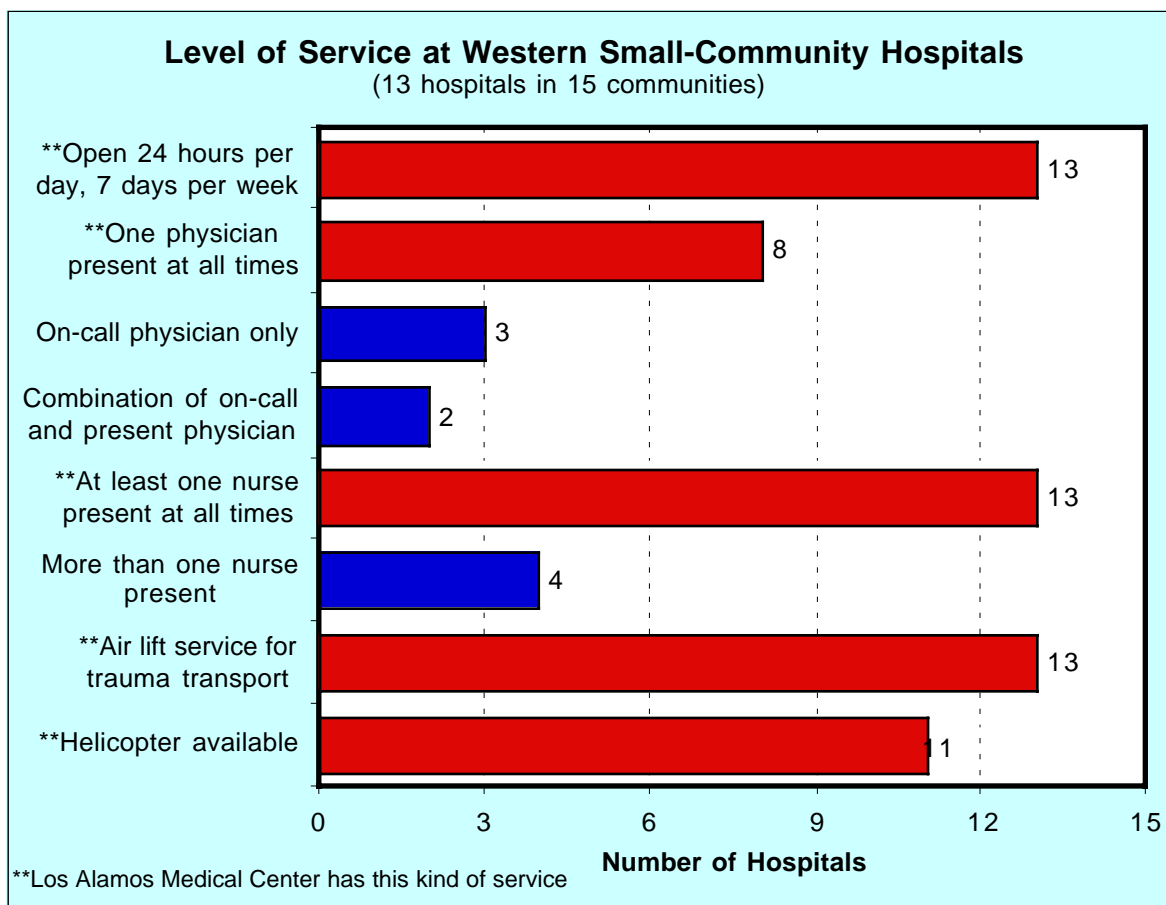
### **Ambulances in White Rock and Española, New Mexico**

The Los Alamos County Fire Department provides emergency ambulance service for the Los Alamos town site and LANL. LANL provides funding for a portion of the operations budget of the local fire department. Española Hospital provides emergency ambulance service for Rio Arriba and northern Santa Fe County. Española Hospital provides the only emergency management services in that area. Both LAMC and Española Hospital use private ambulance services for transport of patients to other hospitals and or health care facilities.



### Distance to Metropolitan Statistical Areas and Trauma Centers in Western Small Communities

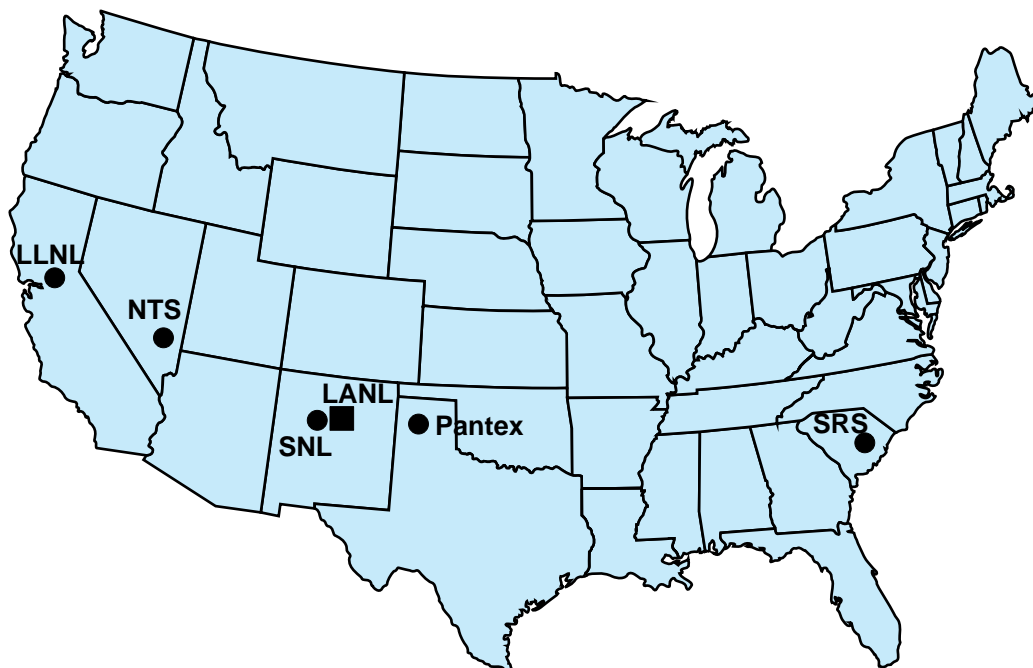
Access to all levels of hospital care was evaluated by comparing the distance to the larger hospital in the nearest metropolitan statistical area and also to the nearest top-level trauma center. Of the western communities, the median distance to a MSA is 111 miles and the distance to a top-level trauma center was 120 miles. Los Alamos is approximately 35 miles to St. Vincent Hospital in Santa Fe and approximately 95 miles to University Hospital in Albuquerque. Los Alamos patients requiring specialized/trauma level care do not have to travel as far as most patients in the western hospital data set. Los Alamos residents have normal to better than expected access to all levels of hospital care.



### Level of Service at Western Small-Community Hospitals

To evaluate emergency department level of service, phone interviews were conducted with the 13 western hospital emergency departments. The services provided by LAMC are normal for a western small-community hospital. All are open 24 hours a day, 7 days per week. Over half have one physician present at all times. All have at least one nurse present at all times. All have air lift services available for trauma center transport. Four hospitals have more than one nurse present. Three hospital emergency departments have only an on-call physician available. Two departments confine physician presence to peak hours and use on-call physician services during less busy hours.

### Five Department of Energy Sites Compared to Los Alamos National Laboratory for Emergency Management Services



### Five Department of Energy Sites Compared to Los Alamos National Laboratory for Emergency Management Services

Phone interviews were conducted with five Department of Energy sites concerning emergency management services. The sites were Lawrence Livermore National Laboratory (LLNL), Sandia National Laboratories (SNL), Pantex Plant, Nevada Test Site (NTS), and Savannah River Site (SRS). Integration of occupational medicine and the site emergency plan was evaluated based on metrics from the DOE Order 440.1A Worker Protection Management for DOE Federal and Contractor Employees and DOE Order 151.1 Comprehensive Emergency Management System.



## Comparison of Department of Energy Sites

### Integration between Occupational Medicine and Site Emergency Management (EM) Plan

	LANL	LLNL	NTS	Pantex	SNL	SRS
Integration between Occupational Medicine and site EM plan	yes	yes	yes	yes	yes	yes
Coordination of memorandums of understanding (MOUs) with off-site medical facilities	4 hospitals	2 hospitals	2 hospitals	3 hospitals	4 hospitals	2 hospitals
Integration with community emergency and disaster plans through support to community (training and programs)	yes	yes	not applicable	yes	would like more	yes
Integration with community emergency and disaster plans through joint emergency training exercises	yes	yes	yes	yes	yes	yes
Integration with community emergency and disaster plans through mutual aid	yes	yes	yes	yes	yes	yes
Integration with community emergency and disaster plans through communication links	yes	yes	yes	yes	yes	yes
Preplanning and prearrangements in site environmental management plan to meet the needs of the facility	yes	yes	yes	yes	yes	yes
Capability for medical aid, triage, decontamination, CPR and life support, health physics, and medical consultants	yes	yes	yes	yes	yes	yes

LANL – Los Alamos National Laboratory (Los Alamos, New Mexico)

LLNL – Lawrence Livermore National Laboratory (Livermore, California)

NTS – Nevada Test Site (Las Vegas, Nevada)

Pantex – Pantex Plant (Amarillo, Texas)

SNL – Sandia National Laboratories (Albuquerque, New Mexico)

SRS – Savannah River Site (Aiken, South Carolina)

### Comparison of Department of Energy Sites – Integration between Occupational Medicine and Site Emergency Management (EM) Plan

All sites have strong integration between Occupational Medicine and the Site Emergency Management Plan. Each site has activities based on the Site Emergency Management Plan and works closely with Occupational Medicine to formulate the plan. LANL is not unique in the requirements that are followed and is normal in how it implements them.

## Comparison of Department of Energy Sites

### Fire Department and Ambulance Services

	LANL	LLNL	NTS	Pantex	SNL	SRS
Population served (including contractors)	11,000 (LANL) 18,344 (community)	9,500	6,200	3,600	10,000	16,000
Ownership of fire department	Los Alamos County	site	site	site	Kirtland Air Force Base	site
Fire department annual budget	\$9 million	\$5.4 million	\$5.8 million (all emergency services)	\$5 million	not applicable	\$7 million
Ambulance control	Los Alamos County	site	site	site	site Occupational Medicine	site
Other ambulance services used	private service used for out-of-town transport	community services	community services	Panhandle Emergency Medical Services System	private service used after hours	not applicable
Air ambulance/helicopters available for trauma transport	both	both	both	helicopter	both	Pro-force helicopter
All fire department staff emergency medical technicians with paramedics available	yes	yes	yes	yes	yes	yes
Number of annual ambulance runs	55 (LANL) 622 (community)	275	49	52 (on site) 37 (off site)	90	100
Occupational medicine	\$3.5 million	\$3.1 million	\$1.6 million	\$1.7 million	\$3.6 million	\$4.7 million

LANL – Los Alamos National Laboratory (Los Alamos, New Mexico)

LLNL – Lawrence Livermore National Laboratory (Livermore, California)

NTS – Nevada Test Site (Las Vegas, Nevada)

Pantex – Pantex Plant (Amarillo, Texas)

SNL – Sandia National Laboratories (Albuquerque, New Mexico)

SRS – Savannah River Site (Aiken, South Carolina)

### Comparison of Department of Energy Sites – Fire Department and Ambulance Services

Fire department, occupational medicine, and ambulance services were compared for the five Department of Energy sites. The only area where LANL is unusual is fire and ambulance service provision. In Los Alamos, the county jointly services the community and LANL for fire protection and ambulance services with funding from LANL. Most sites provide their own fire department with associated ambulance service. Surrounding counties and cities obtain these services independently from the DOE site. SNL obtains fire protection from Kirtland Air Force Base and ambulance service from their Occupational Medicine Department. Pantex cooperates with the Panhandle Emergency Medical Service System (PEMSS) which is a consortium of agencies that support and augment each other in the Texas Panhandle. Pantex will send an emergency vehicle to car accidents on the interstate when they are the closest and PEEMS will assist Pantex with frequent grass fires in the area.

## Comparison of Department of Energy Sites

Assistance to Hospitals						
	LANL	LLNL	NTS	Pantex	SNL	SRS
Coordination of memorandums of understanding with off-site medical facilities	4 hospitals	2 hospitals	2 hospitals	3 hospitals	4 hospitals	2 hospitals
Assistance to hospitals with memorandums of understanding for decontamination training and equipment	yes	yes	yes	yes	yes	yes
Assistance to hospitals with memorandums of understanding for Poison and Drug Information Management System funds	yes	none	none	none	yes	none
Assistance to hospitals with memorandums of understanding for facility funds	none	none	none	yes	none	none
Provide operating funds to hospitals with memorandums of understanding	none	none	none	none	none	none
Off-site decontamination facilities	decontamination room at Los Alamos Medical Center and Española Hospital	available	available	decontamination room at VA hospital	decontamination room at University Hospital	available

LANL – Los Alamos National Laboratory (Los Alamos, New Mexico)

LLNL – Lawrence Livermore National Laboratory (Livermore, California)

NTS – Nevada Test Site (Las Vegas, Nevada)

Pantex – Pantex Plant (Amarillo, Texas)

SNL – Sandia National Laboratories (Albuquerque, New Mexico)

SRS – Savannah River Site (Aiken, South Carolina)

### Comparison of Department of Energy Sites – Assistance to Hospitals

Assistance provided by Department of Energy sites to hospitals with which they have memorandum of understanding agreements was evaluated. Operating funds are NOT given to hospitals. DOE sites do provide assistance to hospitals with MOU agreements in the form of training and funds for decontamination facilities. The assistance provided by LANL to LAMC, Española Hospital, and St. Vincent Hospital is comparable to what is provided by other DOE sites. SNL and LANL are the only two sites that have provided funds for a Poison/Drug Information Management System.

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# Acronyms

<b>AHA</b>	American Hospital Association
<b>ALOS</b>	average length of stay
<b>AMA</b>	American Medical Association
<b>ASO</b>	administrative services only
<b>BCBS</b>	Blue Cross and Blue Shield
<b>BCBSNM</b>	Blue Cross and Blue Shield of New Mexico
<b>CF</b>	conversion factor
<b>CPT</b>	current procedure terminology
<b>D.O.</b>	Doctor of Osteopathy
<b>DOE</b>	Department of Energy
<b>EM</b>	emergency management
<b>FS</b>	full service
<b>FTE</b>	full-time employee
<b>GDP</b>	gross domestic product
<b>HCFA</b>	Health Care Finance Administration
<b>HMO</b>	health maintenance organization
<b>HPG</b>	health priorities group
<b>IPA</b>	Independent Practice Association
<b>LAMC</b>	Los Alamos Medical Center
<b>LANL</b>	Los Alamos National Laboratory
<b>LA-PHO</b>	Los Alamos Physician Hospital Organization
<b>LATC</b>	Los Alamos Total Care
<b>LAVNS</b>	Los Alamos Visiting Nurse Service
<b>LLNL</b>	Lawrence Livermore National Laboratory
<b>MG</b>	modified gross
<b>MOU</b>	memorandum of understanding
<b>MSA</b>	metropolitan statistical area
<b>NNM</b>	northern New Mexico
<b>NNN</b>	net net net
<b>NTS</b>	Nevada Test Site
<b>P&amp;I</b>	principal and interest
<b>PCP</b>	primary care physician
<b>PEMSS</b>	Panhandle Emergency Medical Service System
<b>POS</b>	point-of-service

## Acronyms

<b>PPO</b>	preferred provider organization
<b>RBRVS</b>	resource based relative value scale
<b>RVU</b>	relative value unit
<b>SNL</b>	Sandia National Laboratories
<b>SRS</b>	Savannah River Site
<b>UC</b>	University of California

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## **The Oath**

**by Hippocrates**

**Written 400 B.C.E**

**Translated by Francis Adams**

I swear by Apollo the physician, and Aesculapius, and Health, and All-heal, and all the gods and goddesses, that, according to my ability and judgment, I will keep this Oath and this stipulation – to reckon him who taught me this Art equally dear to me as my parents, to share my substance with him, and relieve his necessities if required; to look upon his offspring in the same footing as my own brothers, and to teach them this art, if they shall wish to learn it, without fee or stipulation; and that by precept, lecture, and every other mode of instruction, I will impart a knowledge of the Art to my own sons, and those of my teachers, and to disciples bound by a stipulation and oath according to the law of medicine, but to none others. I will follow that system of regimen which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous. I will give no deadly medicine to any one if asked, nor suggest any such counsel; and in like manner I will not give to a woman a pessary to produce abortion. With purity and with holiness I will pass my life and practice my Art. I will not cut persons laboring under the stone, but will leave this to be done by men who are practitioners of this work. Into whatever houses I enter, I will go into them for the benefit of the sick, and will abstain from every voluntary act of mischief and corruption; and, further from the seduction of females or males, of freemen and slaves. Whatever, in connection with my professional practice or not, in connection with it, I see or hear, in the life of men, which ought not to be spoken of abroad, I will not divulge, as reckoning that all such should be kept secret. While I continue to keep this Oath unviolated, may it be granted to me to enjoy life and the practice of the art, respected by all men, in all times! But should I trespass and violate this Oath, may the reverse be my lot!

# Los Alamos

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Los Alamos, NM 87545

